

HP StorageWorks

Command View XP Command Line Interface (CLI) reference guide

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Command View XP Command Line Interface (CLI) reference guide

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About this guide

This guide provides information about:

- Executing batch processes to run one or more CLI commands
- Using the CLI to execute session, device, SNMP IP security, and license key administration commands, and other general commands
- Executing LUN and volume management commands to XP disk arrays
- Listing details and status for the DKC and DKU components, and SMNP traps
- Understanding and resolving error messages

Intended audience

This guide is intended for use by customers and HP authorized service providers who are experienced with the following:

- Disk array hardware and software
- Storage systems

Prerequisites

Prerequisites for using this product include:

- The most recent version of Command View XP is installed.
- The HP StorageWorks XP disk arrays are setup.
- Path Connectivity is installed (optional). Refer to the *HP StorageWorks Command View XP installation guide* for more information.
- Refer to the `readme.txt` file on the CD for any last minute announcements.

Related documentation

- In addition to this guide, please refer to other documents for this product:
- *HP StorageWorks Command View XP installation guide*
- *HP StorageWorks Command View XP Path Connectivity user guide*
- *HP StorageWorks Command View XP Path Connectivity Command Line Interface (CLI) reference guide*
- *HP StorageWorks Command View XP for XP Disk Arrays user guide*
- Command View XP and Path Connectivity online help

These and other HP documents can be found on the HP web site: <http://www.hp.com/support/>.


Document conventions and symbols


Table 1 Document conventions

Convention	Element
Medium blue text: Figure 1	Cross-reference links and e-mail addresses
Medium blue, underlined text (http://www.hp.com)	Web site addresses
Bold font	<ul style="list-style-type: none">• Key names• Text typed into a GUI element, such as into a box• GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
<i>Italics font</i>	Text emphasis
Monospace font	<ul style="list-style-type: none">• File and directory names• System output• Code• Text typed at the command-line
<i>Monospace, italic font</i>	<ul style="list-style-type: none">• Code variables• Command-line variables
Monospace, bold font	Emphasis of file and directory names, system output, code, and text typed at the command line

 **WARNING!** Indicates that failure to follow directions could result in bodily harm or death.

 **CAUTION:** Indicates that failure to follow directions could result in damage to equipment or data.

 **IMPORTANT:** Provides clarifying information or specific instructions.

 **NOTE:** Provides additional information.

 **TIP:** Provides helpful hints and shortcuts.

HP technical support

Telephone numbers for worldwide technical support are listed on the HP support web site:
<http://www.hp.com/support/>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages

- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign up online using the Subscriber's choice web site at <http://www.hp.com/go/e-updates>.

- Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

HP-authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-345-1518.
- Elsewhere, visit the HP web site: <http://www.hp.com>. Then click **Contact HP** to find locations and telephone numbers.

Helpful web sites

For third-party product information, see the following HP web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- <http://www.hp.com/support/>

1 Getting started

The Command View XP Command Line Interface (CLI) is a text-based interface used to manage and retrieve information about XP disk arrays.

Use the CLI if you prefer a text-based interface to the graphical user interface (GUI) or when it is more efficient to run scripts or batch files to manage your XP disk arrays.

Input can be in the form of single line entries or pre-written batch files. Batch files allow complex commands to be executed quickly and with no input errors. It is an efficient method for automating configuration changes and reports.

Output can be displayed on the screen or directed to files for later input into other applications for analysis.

Once installed, the CLI is executed from the Command View management station or a supported host. The CLI install file is contained on the Command View CD-ROM. It is also available through the Command View GUI, under the **Support** tab.

This book describes the CLI commands used to manage the XP48, XP128, XP512, XP1024, and XP12000 disk array family. Many commands can be used with all XP disk array models, but some commands apply only to particular models.

Each command is described using the following format:

- Command name and brief description
- Syntax needed to enable the command
- Arguments needed (if any) to further specify the command
- Example(s) to illustrate the command usage

 **NOTE:** The XP256 is not supported with this version of Command View.

Installing the CLI

Requirements

The CLI can run on the Command View management station or on a host. The requirements are:

- The same version of Command View must be installed on the Command View management station.
- Be sure that JRE 1.4.2 (Windows) or JRE/RTE 1.4.1.07 (HP-UX) is installed on the client platform (the system from which you run the CLI). Other operating systems or JRE versions are not supported.
- The host must have network connectivity to the Command View management station.
- The Command View CLI client can be installed and run on the following operating systems:
 - Windows 2000/2003 (32-bit) with JRE 1.4.2
 - HP-UX 11.00/11.11 (PA-RISC) with JRE 1.4.1.07
 - HP-UX 11.23 (64-bit) with JRE 1.4.1.07

Installation

To download and install the Command View CLI client:

1. Download the `cvcli.tar` file by navigating to the Command View **Support** tab. Click **Support > Download Page > Command View Command Line Interface (CV CLI) Download Section > CV CLI Client**.
2. Un-tar the file `cvcli.tar` to any location you want. For a Windows host, use WinZip 7.0 or later. For a UNIX host, use the command `tar xvf cvcli.tar`.

3. After you un-tar the file, the CLI components are located at `<your_path>/cvcli`. It does not matter where you un-tar the files, but all of the following files must be in the same directory:
 - `cli.jar`
 - `CLI_Commands.xml`
 - `CLIhelp.xml`
 - `configModifyScript128_1024_12000.txt`
 - `configModifyScript512_48.txt`
 - `configscript.txt`
 - `configscriptlegacy.txt`
 - `cssi_sec_interfaces.jar`
 - `cvcli`
 - `CVCLI.bat`
 - `CVCLI.properties`
 - `CVCLI.txt`
 - `CVCLIScripting.txt`
 - `xerces.jar`
4. To complete the installation, follow the instructions found in the `CVCLI.txt` file.

Running the CLI

Modes of execution

There are two modes of CLI execution: interactive mode and batch mode.

Interactive mode

Use interactive mode (the default mode) to enter one command at a time. In this mode, the CLI provides a command prompt. You enter commands one at a time until you end the session by typing `exit`.

For Windows hosts:

Go to `<your_path>\cvcli` and run `cvcli.bat` by entering `cvcli`.

A login window prompts you for a user name and password.

For UNIX hosts:

Go to `<your_path>/cvcli` and run `cvcli`.

A login window prompts you for a user name and password. For HP-UX hosts, bypass the login window by entering `cvcli -p <user>/<password>`.

Batch mode

Use batch mode to execute a batch file containing multiple CLI commands. This is useful for submitting a large number of commands. The session ends after the commands in the batch file have been executed.

Commands in a batch file are not executed in the order they are listed in the file. Instead, similar commands are grouped together and executed together to increase speed and efficiency. For more information about batch mode, see "[Batch Processing](#)" on page 231.

For Windows hosts:

Go to `<your_path>\cvcli` and enter `cvcli -f <filename>` where `<filename>` is the name of an input file containing Command View CLI commands.

A login window prompts you for a user name and password.

For UNIX hosts:

Go to `<your_path>/cvcli` and enter `cvcli -f <filename>` where `<filename>` is the name of an input file containing Command View CLI commands.

A login window prompts you for a user name and password. For HP-UX hosts, bypass the login window by entering `cvcli -p <user>/<password> -f <filename>`.

Logging in

By default, when you run the CLI program, a login window like the one shown in [Figure 1](#) is displayed.



Figure 1 Login window

To log in, enter your user name and password and click **OK**.

Log in using a valid Command View user name and password. The Command View defaults are administrator/administrator for modify privileges, and user/user for view-only privileges.

To run the CLI from a telnet session using a command prompt window, use a command prompt window that supports the X Windows function, such as Reflection X, or use the command line login method that bypasses the login window. A command prompt window that does not support the X Windows function will not display the graphical login window.

Bypassing the Login window

You can include login information in the `cvcli` startup command by using the `-p` option, in which case the login window is not displayed. This is useful for processing commands from a batch file, as execution is not halted by the login window. CLI program startup fails if the login information is not correct.

For interactive mode, enter:

```
cvcli -p <user/password>
```

For batch mode, enter:

```
cvcli -p <user/password> -f <filename>
```

Command syntax

The general syntax of CLI commands is:

```
command [<module name>] [<arguments>]
```

command

One of the commands in the CLI.

<module name>

The object of the command, such as `lun`, `lun_group`, `wwn`, and so forth.

<arguments>

The variables for the command and module, such as `<portname>`, `<scsi_id>`, `<lun_id>`, `<cu_id>`, and `<ldev_id>`.

Configuration elements are separated by commas (,).

Example: This example creates a new LUN.

```
create lun 1A, 0F, 1, 0, 1
```

In this example, `create` is the command, `lun` is the module, and `1A`, `0F`, `1`, `0`, and `1` are the arguments.

Commands and options are not **case sensitive** or **space sensitive**. Enter arguments in any order as long as all required parameters are provided. Arguments between “[]” are optional and arguments with “...” accept multiple values.

Command options

-f <filename>

Get the commands from a batch file (used with the `cvccli` command when starting the CLI and with the `execute` command in an interactive session). Specify a path and filename.

-p <user>/<password>

Bypass the login screen (used only when starting the CLI).

-o <filename>

Send the results to a file instead of displaying them on the screen. Specify a path and filename.

Output options

All CLI commands support the following output options:

| more or /p

List the output one page at a time.

-csv

List the output as comma separated values. The default output format is space separated.

-l

Long listing (more detailed output).

-col <columns...>

List specified columns only. Only the items in the specified columns are displayed.

-sa <columns>

Sort the output on the specified column in ascending order.

-sd <columns>

Sort the output on the specified column in descending order.

CLI output for mainframe volumes

With the XP128/XP1024/XP12000, mainframe volumes can be managed using the Command View GUI when the mainframe feature license keys are installed. The Command View CLI does not support the display or management of mainframe information. When mainframe feature licenses are installed, the output for the following commands contains a message indicating that information for mainframe and intermediate volumes is not displayed.

- `list port`
- `list ldev`
- `list lun`
- `list vsc`
- `list parity_group`
- `list luse`
- `list pg_status`

Example output

```
list lun
Information about mainframe and intermediate volumes are not shown. To manage
those volumes, please access the mainframe management applications using the CV-XP
web GUI
PortName  HostGroupNickName  LunID  CU  LDEV
CL1-A     GrpNick1           0      0  00
CL1-B     GrpNick1           1      0  02
CL1-A     GrpNick4           1      0  0A
CL1-E     GrpNick1           0      0  00
CL1-a     GrpNick1           0      0  00
```

Example output with -l option

```
list ldev -l
Information about mainframe and intermediate volumes are not shown. To manage
those volumes, please access the mainframe management applications using the CV-XP
web GUI
CU  LDEV  Emulation  ExpansionStatus  Count  Raid  Paths  Capacity  Reserve
DeviceType  CmdDevSecurity
0    00    OPEN-E     EXPANDED_TOP      3  RAID1  2      2347
Normal      Lun        OFF
```

-o option to send output to a file

The `-o <filename>` option stores the results of any command execution in a file instead of displaying the lines on the screen.

You can use this option to save output for later analysis. The output format is comma delimited (also known as CSV). You can import files in this format into Microsoft Excel and other programs.

When you use this option, the new file created overwrites any existing file with the same path and name.

Sets and ranges in commands

In many commands, you can specify arguments such as `<portname>` as a single item, a set, or a range.

Sets and ranges may be used for parity groups, LDEVs, LUN IDs, CU numbers, etc. Each command that accepts sets or ranges describes the specific format for entry. The general rules are described below.

Sets

Sets are lists of non-consecutive elements. Elements of sets are separated by a colon (:). For example, ports CL1-A, CL1-C, and CL1-E would be expressed as `1A:1C:1E`. Port names must be specified in truncated form (for example, `1A` and not `CL1-A`) because the hyphen (-) is reserved for specifying range values.

Sets may be used in several XP128/XP1024/XP12000 commands.

Ranges

A range specifies consecutive elements. Ranges are indicated by dashes. For example, the range of ports from CL1-A to CL1-E is expressed as `1A-1E`.

For XP128/XP1024/XP12000 commands, port names must be specified in truncated form (for example, `1A` and not `CL1-A`) because the hyphen (-) is used to specify the range.

Typical preliminary commands

Once you are logged in, you need to implement some preliminary commands to discover, add, and connect to the disk arrays you want to manage:

- See which disk arrays are available to manage (`list device` command).
- Connect to a disk array before issuing disk array management commands (`connect` command).
- Retrieve current information by issuing the `update` command.
- Enter add, create, list, modify, or delete commands as needed.
- Disconnect from a disk array (`disconnect` command).
- End the CLI session (`exit` command).

Users with modify privileges can perform changes to disk array configurations. Users with view privileges can perform only view-only CLI operations.

Only the user “administrator” can change Command View administrative settings, such as adding new disk arrays. The administrator is also a modify user for disk array management operations.

When users with modify privileges issue the `connect` command, Command View tries to acquire exclusive access to the disk array (lock the disk array). Locking prevents other users from making any configuration changes to the disk array. If the lock cannot be obtained (for example, if another user is making modifications to the array), the command will fail. Users with view permission can connect to a disk array at any time, regardless of the lock state.

Discovering disk arrays

Once you are logged in, use the `list device` command to determine which disk arrays are available to be managed:

```
list device
```

Adding disk arrays to be managed

Adding and deleting disk arrays is not supported by the Command View CLI. To add and delete disk arrays, use the Command View GUI.

Connecting to a disk array

To select a disk array to manage, execute the `connect` command. You can manage any disk array listed by the `list device` command.

```
connect <array_serial_number>
```

`<array_serial_number>` is the disk array’s serial number. If a connection can’t be made, an error message is displayed.

Updating disk array configuration information

In some cases, following a successful `connect` command, Command View may need to update its configuration data for the disk array by obtaining it from the disk array. This is also known as data retrieval.

The `update` command copies information from the disk array to a database on the Command View management station. The update process also occurs after running commands that change the disk array configuration.

You cannot issue configuration modification commands while an update is in progress. The CLI rejects commands and reports `update data retrieval in progress`. You can use `list` commands to see the previous configuration data, but bear in mind that information may change once the data retrieval process completes.

You can issue administrative commands during the data retrieval process. This includes the `list array_status` command to display the status of the disk array. The command can be used to determine when the data retrieval has completed.

```
list array_status
```

Disconnecting from a disk array

When you have finished managing a disk array, issue the `disconnect` command:

```
disconnect
```

Ending a CLI session

To end the CLI session and terminate the CLI program, use the `exit` command.

```
exit
```


Differences between the disk array family commands

Ranges

Range arguments for the XP48/XP512 require square brackets around the values (for example, [CL0-A-CL0-D]). Range arguments for the XP128/XP1024/XP12000 should be specified without square brackets (for example, 0A-0D).

Multiple values

For the XP48/XP512, when specifying multiple values, both ranges (for example, [CL1-A-CL1-D]) and sets of values (for example, 0A,0B) are supported. Individual values are separated by "," and a range by square brackets and "-".

For the XP128/XP1024/XP12000, multiple values can be specified as a range (for example, 1A-1D) or a set of values (for example, 0A:0D). Individual values are separated by ":" and a range by "-".

Port names


For the XP48/XP512, ports are specified as CL1-A or CL2-A, etc. (for example, the range [CL1-A-CL1-D]).

For the XP128/XP1024/XP12000, you specify ports as 1A, 2A, etc. (for example, 1A-1D).

2 CLI commands for common administrative tasks

This chapter contains the CLI commands for session, device, SNMP IP security, and license key administration. This chapter also contains general CLI commands, such as `execute` and `update`.

Some commands described in this chapter are customized for a particular XP disk array. In a few cases, commands are available for the XP128/XP1024/XP12000 that are not available for the XP48/XP512, and vice versa. Each command description clearly specifies when a command is not supported for a certain XP disk array.

 **NOTE:** Please note that the XP256 array is not supported.

Session administration commands

Use the session administration commands to connect and disconnect sessions, and to display information about a session.

This section describes the following commands:

- [connect](#), page 21
- [disconnect](#), page 22
- [kill session](#), page 23
- [list session](#), page 24

connect

Description This command establishes a session to manage a specified disk array. This has to be done before doing any disk array-related operations.

If the CLI is started with the `-f` option and the `connect` command is in the batch file, this command keeps trying to connect until it establishes a session or until it times out, whichever is earlier. If you execute this command from the CLI prompt, you can see immediately if the connection is successful.

You can access only one disk array at a time through a CLI session. If want to access another disk array, you must first disconnect from the current disk array and connect to the next one.

Only users with access to the full array can connect to the array with the CLI.

Syntax `connect [-r] <array_serial_number>`

Arguments `[-r]`

Connects the user in read-only mode if the user has modify privilege.

`<array_serial_number>`

The serial number of the disk array to which you want to connect.

Example `connect 30433`
`connect -r 30433`

disconnect

Description This command disconnects you from the disk array to which you are currently connected.

Syntax `disconnect`

Example `disconnect`

kill session

Description Use the `kill session` command with the `<sessionId>` option to terminate the specified client session or with the `<array_serial_number>` `<username>` options to terminate a GUI session. Only users in the Administrators group are permitted to terminate GUI sessions.

Syntax `kill session <sessionId>`
or
`kill session <array_serial_number> <username>`

NOTE: `kill session <array_serial_number> <username>` is supported on XP128/XP1024/XP12000 arrays only)

Arguments `<sessionId>`

The ID of the client session to be terminated. `<sessionId>` can be only one value.

`<array_serial_number>`

The serial number of the disk array whose GUI session has to be terminated.

`<username>`

The username whose GUI session has to be terminated. This information is obtained by the `list session <array_serial_number> -gui` command.

Example `kill session ae30tedfx`
`kill session 10033 administrator`

list session

Description Use this command to list the client sessions for the specified disk array.

Syntax `list session <array_serial_number> [-gui]`

Arguments `<array_serial_number>`

The serial number of the disk array whose sessions you want to list.

`[-gui]`

This is an optional parameter. Use this option to display all non-Command View GUI sessions.

This option is only supported for the XP128/XP1024/XP12000 arrays.

Example `list session 10008`

`list session 10033 -gui`

User Name	SLPR No	Host Address	Access Mode	Logged in	Time
user,	SLPR2,	15.106.209.55,	View Mode,	Wed Jun 23 10:46:51	GMT+05:30 2004
samantha,	All,	15.106.209.52,	View Mode,	Wed Jun 23 10:49:55	GMT+05:30 2004
natasha,	All,	15.106.209.99,	View Mode,	Wed Jun 23 10:50:08	GMT+05:30 2004
administrator,	All,	15.106.209.99,	View Mode,	Wed Jun 23 10:51:10	GMT+05:30 2004
user2,	SLPR1,	15.106.209.99,	View Mode,	Wed Jun 23 10:51:18	GMT+05:30 2004

General commands

This section describes the following commands:

- [execute](#), page 26
- [exit](#), page 27
- [help or ?](#), page 28
- [update](#), page 29

execute

Description This command executes commands from a batch file when you are in an interactive session (that is, the CLI was started without the `-f <filename>` option). You are then returned to the CLI prompt.

The file can contain any CLI command except `execute` or `help`. Each line in the file must contain only one command.

Syntax `execute <filename>`

Arguments `<filename>`

The file containing the commands to be executed. It can be specified with an absolute or relative path. If you specify a relative path, then the search for the file is relative to the directory where the CLI was started. Only one file can be specified.

Example

```
execute d:\hpss\CommandView\30044Cmd.txt
execute 30044Cmd.txt
execute ..\30044Cmd.txt
execute .\30044Cmd.txt
```

exit

Description This command exits you from an interactive CLI session.

Syntax `exit`

help or ?

Description Either of these commands displays the syntax and description of the commands and their modules.

Syntax `help [<command>] [<module_name>]`

or

`? [<command>] [<module_name>]`

Arguments `[<command>]`

`<command>` is optional. If this option is not specified, the syntax of the help command is displayed. The command types are `list`, `create`, `modify` and `delete`. If only the command type is specified, the usage of all the modules under the specified command is displayed. For example, `help list` displays the usage for all the `list` commands. Only one command can be specified.

`[<module_name>]`

`<module_name>` is optional. If the module name is given, the full syntax of the command and its arguments are displayed. Otherwise the general syntax of the command is displayed.

Example

```
help
help list
help list ldev
?
? list
? list ldev
```

update

Description The `update` command forces a new data retrieval cycle and is usually required when the server encounters network errors or the existing data with the server is not the most current. Use this command only after connecting to an array.

Syntax `update`

Device administration commands

Use the device administration commands to manage the disk arrays; manage SNMP IP security; and list status and detailed information.

This section describes the following commands:

- [add ipaddress](#), page 31
- [delete ipaddress](#), page 32
- [get_refresh_status](#), page 33
- [list array_config](#), page 34
- [list array_status](#), page 36
- [list device](#), page 38
- [list device_history](#), page 39
- [list ipaddress](#), page 40
- [manage](#), page 41
- [unmanage](#), page 42

add ipaddress

Description This command adds an SNMP manager's IP address to the list in the disk array. Use this command after connecting to a disk array.

This command is supported for the XP48/XP512.

Syntax `add ipaddress <ipaddress...>`

Arguments `<ipaddress>`

The IP address of the SNMP manager to be added. There must be at least one IP address specified.

Example `add ipaddress 15.76.96.152,15.32.72.60`

delete ipaddress

Description This command unregisters SNMP Manager IP addresses from the disk array. The IP address of the Command View management station cannot be deleted unless all the other registered SNMP Manager IP addresses are deleted. Use this command after connecting to a disk array.

This command is supported for the XP48/XP512.

Syntax `delete ipaddress <ipaddress...>`

Arguments `<ipaddress...>`

The IP address of the SNMP manager to be deleted. `<ipaddress>` can be one IP address or a set of IP addresses. There must be at least one IP address specified.

Example `delete ipaddress 15.32.72.60`
`delete ipaddress 15.32.72.60:15.32.72.61:15.32.72.62`

get_refresh_status

Description This command shows the lock and refresh status of the disk array.

This command does not work while connected to an XP128/XP1024/XP12000. Instead, use the `list array_status` command (page 36).

Syntax `get_refresh_status <array_serial_number>`

Arguments `<array_serial_number>`

The disk array serial number.

Example `get_refresh_status 10049`

LOCK_STATUS: CV unlocked the array 10049.REFRESH_STATUS: CV server has latest data.

list array_config

Description This command displays disk array configuration details as displayed on the Status screen of Command View. Some of the configuration details include the firmware version, allocated space, unallocated space, free space, total space, LDEVs per CU, and LDEVs per ACP. This command does not support the `-sa`, `-sd`, or `-col` options.

For the XP128/XP1024/XP12000, view the port and CHA configurations by using the `list port` and `list cha` commands.

Syntax **XP48/XP512:**

```
list array_config
```

XP128/XP1024/XP12000:

```
list array_config [-firmware] [-allocatedspace] [-freespace]  
[-totalspace] [-ldevspercu] [-ldevsperacp] [-cachesize]
```

Arguments The following arguments are not supported for the XP48/XP512.

`[-firmware]`

Displays the firmware version of the disk array.

`[-allocatedspace]`

Displays the allocated space in the disk array.

`[-freespace]`

Displays the free space in the disk array.

`[-totalspace]`

Displays the total capacity of the disk array.

`[-ldevspercu]`

Displays the number of LDEVs per CPU.

`[-ldevsperacp]`

Displays the number of LDEVs per ACP pair.

`[-cachesize]`

Displays the total cache size of the disk array.

Example The following is an example output of the `list array_config` command.

```
Firmware revision,          04-06-01
Array configuration and status
Allocated space,           62 Gbytes
Unallocated space,        3107 Gbytes
Free space,                36 Gbytes
Total Capacity,           3205 Gbytes
Total Cache size, 558 Gbytes
Number of LDEVs per CU
CU 0, 256
CU 1, 207
Number of LDEVs per ACP pair
ACP Pair 1, 232
ACP Pair 2, 231
ACP Pair 3, 0
ACP Pair 4, 0
```

[-firmware]

```
Firmware revision,          04-06-01
```

[-allocatedspace]

```
Allocated space,           62 Gbytes
```

[-freespace]

```
Free space,                36 Gbytes
```

[-totalspace]

```
Total Capacity,           3205 Gbytes
```

[-ldevspercu]

```
Number of LDEVs per CU
CU 0, 256
CU 1, 207
```

[-ldevsperacp]

```
Number of LDEVs per ACP pair
ACP Pair 1, 232
ACP Pair 2, 231
ACP Pair 3, 0
ACP Pair 4, 0
```

[-cachesize]

```
TotalCacheSize
16384 Mbytes
```

list array_status

Description This command displays the lock, refresh, and get state and status of all managed disk arrays or a specific XP128/XP1024/XP12000 disk array.

The lock states include:

- LOCKED: Command View has locked the disk array.
- UNLOCKED: The disk array is not locked by the Command View.
- ATTEMPTING: Command View is attempting to lock the disk array.
- ERROR: Error while attempting to lock the disk array.

The refresh states include:

- REFRESHING: The disk array is refreshing for the first time and is transferring the latest configuration data.
- REFRESHED: The disk array is in the refreshed state.
- ERROR: Error while trying to refresh.
- IDLE: The disk array is not on a refresh cycle.
- SET OPERATION IN PROGRESS: Some set operations are in progress and the user cannot complete any other set operations during this time.

The get states include:

- COMPLETE: Command View is done retrieving data.
- FIRST: The Command View server is retrieving data from the disk array. There is no cached data available for the disk array.
- CACHED_DATA: Data is available in Command View, but it is from the local cache.
- OLD_DATA: Data from the disk array is not the latest.
- ERROR: The server has found an error condition while retrieving data.
- ERROR_NO_DATA: The server has found an error condition while retrieving data, and there is no data available in the local cache.

Syntax **XP48/XP512:** **l fee**

```
list array_status
```

XP128/XP1024/XP12000:

```
list array_status <array_serial_number...> [-lock]  
[-refresh] [-get]
```

Arguments The following arguments are not supported for the XP48/XP512.

<array_serial_number...>

The serial number of the disk array whose status is to be displayed. Can be one value or a set of values (for example, 30433 or 30433:35721).

[-lock]

Used to display the lock state only.

[-refresh]

Used to display the refresh state only.

[-get]

Used to display the get state only.

Example XP48/XP512:

```
Serial#,Lock Status,Lock State,Refresh Status,Refresh State,Get Status,Get
State
30055,OK,UNLOCKED,OK,REFRESHED,OK,OLD_DATA
```

XP128/XP1024/XP12000:

```
Serial# Lock_State Lock_Status Refresh_State Refresh_Status Get_State
Get_Status
10033 UNLOCKED OK IDLE OK COMPLETE OK
20074 LOCKED OK IDLE OK OLD_DATA OK
```

[-lock]

```
Serial# Lock_State
30433 UNLOCKED
35721 LOCKED
```

[-refresh]

```
Serial# Refresh_State
30433 REFRESHED
35721 ERROR
```

[-get]

```
Serial# Get_State
10033 COMPLETE
20074 OLD_DATA
```

list device

Description This command lists the disk arrays managed by Command View along with their attribute types and contact information. A disk array can be managed only if the disk array has been added to Command View's database.

Syntax `list device`

Example The output displays the details of the disk arrays that are managed by Command View.

Serial#	IPAddress	Type	Contact	Location	Managed	Ftp	Protocol
30433	15.76.97.185	XP12000	ISO	ISO-B	manage	noftp	rmi
10033	15.32.76.150	XP1024	Roseville	R5L	manage	noftp	rmi
20074	15.32.76.151	XP128	Roseville	R5L	manage	noftp	rmi
30055	15.32.76.153	XP512	Bangalore	SS	unmanage	noftp	snmp

list device_history

Description This command displays the device history of the specified disk array.

Syntax Before connecting to the disk array:

```
list device_history <array_serial_number>
```

```
CV_CLI>list device_history 20036
```

After connecting to the disk array:

```
list device_history
```

```
CV_CLI 20036(R/W)>list device_history
```

Arguments <array_serial_number>

The serial number of the disk array whose device history you want to display.

Example	CV_CLI 20036 (R/W)>list device_history	Sending Request to CV server...
	20036:The server has latest data	
	TimeStamp: Thu 27 14:42:48 PST 2002	Message : Device: 20036
	loaded from database	
	TimeStamp: Thu 27 14:43:41 PST 2002	Message : Get State
	reached GET_STATE_COMPLETE	
	TimeStamp: Thu 27 14:44:00 PST 2002	Message : Lock State
	reached LOCK_STATE_ATTEMPTING	
	TimeStamp: Thu 27 14:44:00 PST 2002	Message : Another manager
	at NT16135 has locked the array	
	TimeStamp: Thu 27 14:45:00 PST 2002	Message : Lock State
	reached LOCK_STATE_LOCKED	
	TimeStamp: Thu 27 14:42:00 PST 2002	Message : Get State
	reached GET_STATE_OLD_DATA	
	TimeStamp: Thu 27 14:45:06 PST 2002	Message : Get State
	reached GET_STATE_COMPLETE	

list ipaddress

Description This command lists the IP addresses of the SNMP Managers registered with the connected disk array. The host IP address is displayed with the caption "CV IP Address."

Syntax `list ipaddress`

Example SNMP Manager IP Addresses
15.32.72.62
15.76.97.136 (CV IP Address)

manage

Description Use this command to enable Command View to manage a disk array. A disk array can be managed through Command View only if it has been first been added to the Command View database. Use this command before connecting to a disk array.

Syntax `manage <array_serial_number>`

Arguments `<array_serial_number>`

The serial number of the disk array to be managed.

Example `manage 30433`

unmanage

Description Use this command to disable management of a disk array by Command View. A device can be unmanaged only if it is currently managed. Use this command before connecting to a disk array.

Syntax `unmanage <array_serial_number>`

Arguments `<array_serial_number>`

The serial number of the disk array to be unmanaged.

Example `unmanage 30433`

User administration commands

Use the user administration commands to manage user accounts, modify user account attributes, and change passwords. The modifications that you are permitted to make will depend on the user group you belong to. Three types of user groups are provided:

- *Users*: Members of this group have read-only access to array management for the arrays assigned to them. They also have read-only access to the Command View framework
- *StorageAdmins*: Members of this group have read-write access to array management for the arrays assigned to them and to snap-in applications. They also have read-only access to the Command View framework.
- *Administrators*: Members of this group are administrators of the Command View management station and can perform all tasks related to Command View and the arrays.

For a detailed description of the roles and responsibilities assigned to each user group, see [Table 2](#) on page 44.

When a user is created in the *Administrators* group, a lock on the XP128/XP1024/XP12000 arrays is required. If another user is holding a lock on the arrays, then an error message is displayed and this operation needs to be repeated after obtaining the lock.

When users are created in the *StorageAdmins* or *Users* group, a lock on the arrays is not required because no device is assigned to the users by default. The devices can be assigned using the `modify attributes` command.

This section describes the following commands:

- [create user](#), page 46
- [delete user](#), page 47
- [list users](#), page 48
- [modify attributes](#), page 49
- [modify password](#), page 50

Table 2 Group Name Properties

Group name/Role	Properties
Users Read-only users	<p>This group represents all users who have read-only permissions. Only administrators from the Administrator group can add or delete users from this group.</p> <p>This group and its members are governed by the following rules:</p> <ul style="list-style-type: none">• Only the default user with the user ID of “user” is a permanent member of this group. All other users belonging to this group can be deleted.• Read-only access is provided by default to the Command View platform, including user administration, device administration, session administration, and administration of any snap-in applications (Performance Advisor XP and Application Policy Manager XP).• Members of this group do not have access to the arrays by default; however, read-only access can be assigned.• The default user with user ID of “user” will have access to all the arrays and full array access in the case of a partitioned XP12000, by default.• Read-only access to the arrays is assigned to members of this group by users belonging to the Administrators group.• No group-level permission assignments to the arrays are permitted; therefore, access to the arrays must be assigned to each individual user.• Users belonging to this group can change their own passwords.

Table 2 Group Name Properties (continued)

Group name/Role	Properties
<p>Administrators</p> <p>Command View management station administrators (a local group)</p>	<p>This group represents all users who are Command View administrators. This group and its members are governed by the following rules:</p> <ul style="list-style-type: none"> • Only the default user with the user ID of “administrator” is a permanent member of this group. All other users belonging to this group can be deleted. • Modify access is provided to the Command View platform, including device administration, session administration, user administration, license administration, and the administration of any snap-in applications (Performance Advisor XP and Application Policy Manager XP). • Modification privileges are provided for all arrays (and by default, to all partitions in the case of partitioned XP1200 arrays) added to Command View. • Modification privileges are provided for assigning or unassigning array membership and partitions. • Privileges cannot be modified for individual administrators; in other words, the privileges of the members of this group are fixed and cannot be changed. • Users belonging to this group can change the passwords of all users in any group except the password of the default “administrator” user.
<p>StorageAdmins</p> <p>Storage Administrators (users of the storage system)</p>	<p>This group represents all users who are storage-only administrators. This group and its members are governed by the following rules:</p> <ul style="list-style-type: none"> • Only the default user with a user ID of “storageadmin” is a permanent member of this group. All other users belonging to this group can be deleted. • Read-only access is provided by default to the Command View platform, including user administration, device administration, and session administration. For snap-in applications (Performance Advisor XP and Application Policy Manager XP), users belonging to this group have read/write access. • Modification privileges to Command View cannot be assigned to members of this group. • Members of this group do not have access to the arrays by default. • Access to particular arrays and partitions of XP12000 arrays, allowing modification privileges, can only be assigned to individual users in this group by users belonging to the Administrators group. • No group-level permission assignments to the arrays are permitted; therefore, access to the arrays must be assigned to each individual user. • Whenever a user in this group is given access to an array, his/her user name and password are added to the web console of the array. • Users belonging to this group can only change their own password.

create user

Description Use this command to create a new user account in any of the three groups. The following user groups are available: *Users*, *StorageAdmins*, and *Administrators*. For additional information about these groups, see "[User administration commands](#)" on page 43 and [Table 2](#) on page 44.

Only a user belonging to the *Administrators* group can create user accounts. When you create a user account, the user name must have at least six characters, and cannot have more than 16 characters. Passwords must have at least six characters, and cannot have more than 32 characters. Also, the user name or password cannot contain spaces or any of the following special characters: @ # & ~ = + \ , ; : * ? < > | / "

When a user belonging to the *Administrators* group is created, all XP arrays presently managed by Command View are automatically assigned to the user. Arrays are not automatically assigned to users belonging to the *StorageAdmins* or *Users* group. To assign arrays to members of these groups, see "[modify attributes](#)" on page 49.

By default, all users belonging to the *Administrators* group have access to all the assigned arrays. Default users in the *Users* or *StorageAdmins* group have read-only access to any assigned arrays.

This command is not supported after connecting to a disk array, within a batch file, or with the `-f` option. In addition, ranges are not supported.

Syntax `create user <username>, <password>, <confirm_password> <groupName>`

Arguments `<username>`

The name of the user.

`<password>`

The user's password.

`<confirm_password>`

The user's password again for verification purposes.

`<groupName>`

The name of the user's group.

Example This example creates a user in the *Users* group:

```
create user natasha,user123,user123,Users
```

This example creates a user in the *Administrators* group:

```
create user natasha,user123,user123,Administrators
```

delete user

Description Use this command to delete a user account. Only a user belonging to the *Administrators* group can delete a user. When a user is deleted, all assignments to the array for that user are deleted. Default users (that is, *User*, *StorageAdmin*, and *Administrator*) cannot be deleted.

This command is not supported after connecting to a disk array, within a batch file, or with the `-f` option. In addition, ranges are not supported.

Syntax `delete user <username>`

Arguments `<username>`

The name of the user whose account is to be deleted.

Example `delete user natasha`

list users

Description Use this command to list all users and view specific information about them, such as determining whether the user belongs to the *Users*, *StorageAdmins* or *Administrators* group and a user's assigned arrays and partitions.

If the output this command contains partition level information, the following warning message appears: Only viewing of partitioning assignment is allowed in CLI; Partitioning assignment operations are not supported in the CVCLI. Please use the CV-GUI.

Syntax `list users [-username <UserName...>] [-group <groupName...>] [-array <arraySerialNo>]`

Arguments `[-username <UserName...>]`

Displays a list of the specific users.

`[-group <groupName...>]`

Displays a list of users belonging to the specified group name.

`[-array <arraySerialNo>]`

Displays a list of users belonging to the specified array.

Example `list users` without any options provides a list of all users along with user details.

```
UserNameUserGroupArray Access
AdministratorAdministrators30055:10033:20074
UserUsers30055:10033:20074
storageadminStorageAdmins--
samanthaAdministrators30055:10033:20074
NatashaStorageAdmins20074 (SLPR2):10033
User123StorageAdmins30055 (SLPR1)
User12Users10033
```

`[-username <UserName...>]`

```
UserNameUserGroupArray Access
samanthaAdministrators10033:20074
NatashaStorageAdmins20074 (SLPR2):10033
```

`[-group <groupName...>]`

```
UserNameUserGroupArray Access
AdministratorAdministrators30055:10033:20074
SamanthaAdministrators30055:10033:20074
```

`[-array <arraySerialNo>]`

```
UserNameUserGroupArray Access
AdministratorAdministrators30055:10033:20074
UserUsers30055:10033:20074
SamanthaAdministrators30055:10033:20074
NatashaStorageAdmins20074 (SLPR2)
```


modify attributes

Description Use this command to modify the attributes of a specified user, such as granting access to or revoking access from an array. Only users belonging to the *Administrators* group can modify attributes.

By default, all users belonging to the *Administrators* group have access to all the added arrays in modify mode. Default users in the *users* group have read-only access to the added arrays.

If for some reason (such as not obtaining a lock) an array was not assigned to the user after assigning all arrays, an error message, "Arrays with serial number <xxxxxx, xxxxxx> could not be assigned to this user", will be displayed.

NOTE: From the web-based GUI you can assign/unassign a user to a partition of the array. This is not supported in the CLI. In the CLI, you can only assign/unassign full array access.

Syntax `modify attributes <username> [-grant <SerialNo...>] [-revoke <SerialNo...>]`

Arguments `<username>`

The name of the user whose attributes are to be modified.

`[-grant <SerialNo...>]`

The list of arrays that has to be added to the list of arrays managed by the user.

`[-revoke <SerialNo...>]`

The list of arrays that has to be removed from the list of arrays currently being managed by the user.

Example To give Natasha access to arrays 10033 and 20074:

```
modify attributes Natasha -grant 10033,20074
```

To give Natasha access to 30011 and remove access to 10033:

```
modify attributes Natasha -grant 30011 -revoke 10033
```

modify password

Description Use this command to change a user's password. This command is not supported after connecting to a disk array, within a batch file, or with the `-f` option. In addition, ranges are not supported.

Users can change their own passwords. However, only a user belonging to the *Administrators* group can modify other users' passwords. (Administrators are not required to enter the old password when changing the password.)

Only the default user in the *Administrator* group can change their own password.

Passwords must have at least six alphanumeric characters, and cannot have more than 32 characters. Also, the password cannot contain spaces or any of the following special characters: @ # & = + \ , ; : * ? < > | / "

Syntax Administrator syntax:

```
modify password <username>, <new_password>, <confirm_password>
```

Administrator syntax to modify the administrator's password:

```
modify password <username>, <old_password>, <new_password>,  
<confirm_password>
```

User syntax:

```
modify password <username>, <old_password>, <new_password>,  
<confirm_password>
```

Arguments <username>

The name of the user.

<old_password>

The user's old password. This is required for users to change their own password, but not necessary for administrators.

<new_password>

The user's new password. The new password cannot be the same as the old password.

<confirm_password>

The user's new password again for verification purposes.

Example Administrator example:

```
modify password natasha,456xyz,456xyz
```

User example:

```
modify password natasha,123abc,456xyz,456xyz
```

License key administration commands

Use the license key administration commands to display information about the license keys installed on an XP disk array. For the XP128/XP1024/XP12000, additional commands are available to install and uninstall license keys on the disk array.

This section describes the following commands:

- [install license_key](#), page 52
- [list licensekey_info](#), page 53
- [uninstall license_key](#), page 54

install license_key

Description Use this command to install license keys for optional software. You can install more than one license key in one operation.

This command is not supported for the XP48/XP512.

HP Continuous Access XP must be installed before HP Continuous Access XP Extension is installed. The two items should be specified as separate commands.

Example:

```
install license_key HP_CONTINUOUS_ACCESS_XP, NJGTL6XX8HFSAIMN00GJ
install license_key HP_CONTINUOUS_ACCESS_EXTENSION, NJGTL6XX8HFSAIMN00GG
```

Syntax `install license_key <productname...>, <keycode...>`

Arguments `<productname...>`

The name of the application to be installed. `<productname>` can be one application or a set of applications (for example, HP_CACHE_LUN:HP_AUTOLUN_XP). The number of applications specified must be equal to the number of key codes specified.

`<keycode...>`

The license key for the specified application. `<keycode>` can be one key or a set of keys. The number of key codes specified must be equal to the number of applications specified.

Example

```
install license_key HP_CACHE_LUN, NJGTL6XX8HFSAIMN00GJ
install license_key HP_CACHE_LUN:HP_AUTOLUN_XP,
NJGTL6XX8HFSAIMN00GJ:BJGDXX24DFR4G6H0XGFT
```

list licensekey_info

Description This command lists information about the license keys installed on the disk array.

`list licensekey_info` has the following information associated with it:

- **FunctionalityOption.** The list of software and options for which licenses are installed or can be installed.
- **Status.** The installation status of the various software modules. The possible values are "Installed" and "Not Installed."
- **KeyKind.** The type of the key installed for the software. The keys installed can be Temporary, Emergency, or Permanent. If a key is not installed for an application, "--" is displayed.
- **DaysLeft.** The number of days left before the license key expires. This value is valid only for Temporary and Emergency keys. For software installed with Permanent Key, "--" is displayed.
- **Licensed Capacity(TB).** The capacity of the license in terabytes (TB). This is valid only for Permanent keys. If the license is for 65535 TB, "Frame Unlimited" is displayed.
- **Used Capacity(TB).** The current used capacity of the license in terabytes, rounded to the nearest .01TB. This is valid only for Permanent keys. This column is displayed only for the XP128/XP1024/XP12000 arrays.

NOTE: No support is available for the Management Server-Based Licensing feature. Only Array-Based licensing is supported.

Syntax `list licensekey_info [-productname <productname>]`

Arguments `[-productname <productname>]`

Displays the license key details for only the products specified.

Example

FunctionalityOption	Status
HP_CONTINUOUS_ACCESS_XP	Installed
HP_CONTINUOUS_ACCESS_XP_EXTENSION	Installed
HP_BUSINESS_COPY_XP	Installed
HP_CACHE_LUN	Installed
HP_AUTOLUN_XP	Installed
HP_APPLICATION_POLICY_MANAGER	Installed
HP_LUN_CONFIG_AND_SECMGR_XP_VOLUME_MGR	Installed
HP_LUN_CONFIG_AND_SECMGR_XP_LUN_MGR	Not Installed

-l Option

`list licensekey_info -l` displays all of the details about the license keys: Functionality, Status, KeyKind, Days Left, Used Capacity(TB), and Licensed Capacity(TB).

```
FunctionalityOption, Status, KeyKind, DaysLeft, Used Capacity(TB), Licenced
Capacity (TB)
HP_CONTINUOUS_ACCESS_XP Installed Permanent -- Frame Unlimited Frame Unlimited
HP_CONTINUOUS_ACCESS_XP_EXTENSION Installed Permanent -- 20 33
HP_BUSINESS_COPY_XP Installed Permanent --19 24
HP_CACHE_LUN Installed Permanent -- 19 33
HP_AUTOLUN_XP Installed Permanent -- Frame UnlimitedFrame Unlimited
HP_APPLICATION_POLICY_MANAGER Installed Permanent -- 19 34
HP_LUN_CONFIG_AND_SECMGR_XP_VOLUME_MGR Installed Permanent -- 2035
HP_LUN_CONFIG_AND_SECMGR_XP_LUN_MGR Not Installed -- -- -- --
```

uninstall license_key

Description Use this command to uninstall license keys for applications. More than one license can be uninstalled in one operation.

This command is not supported for the XP48/XP512.

HP Continuous Access Extension must be uninstalled before HP Continuous Access is uninstalled. The two names should be specified as separate commands.

Example:

```
uninstall license_key HP_CONTINUOUS_ACCESS_EXTENSION
uninstall license_key HP_CONTINUOUS_ACCESS_XP
```

Syntax `uninstall license_key <productname...>`

Arguments `<productname...>`

The name of the application to be uninstalled. `<productname>` can be one application or a set of applications.

Example

```
uninstall license_key HP_CACHE_LUN
uninstall license_key HP_CACHE_LUN:HP_AUTOLUN_XP:HP_BUSINESS_COPY_XP
```

3 CLI commands for the XP128/XP1024/XP12000

This chapter contains CLI commands for LUN and volume management specifically for the XP128/XP1024/XP12000. This chapter also contains additional CLI commands to list information about DKC and DKU components, and SNMP traps.

LUN management commands

This section describes the following commands:

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- [create lun](#), page 57
- [create wwn](#), page 59
- [delete host_group](#), page 60
- [delete lun](#), page 61
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- [modify cmd_device](#), page 71
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- [modify host_group](#), page 74
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create host_group

Description This command creates host groups. Each port can have up to 128 (XP128/XP1024) or 256 (XP12000) host groups. This command permits creating multiple host groups for multiple ports in one operation. Each host group is specified by its nickname.

Syntax `create host_group <portname...>, <hostgrpnickname...>`

Arguments `<portname...>`

The port in which the host group is to be created. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<hostgrpnickname...>`

The host group to be created. `<hostgrpnickname>` can be specified as one group nickname or a set of group nicknames (for example, nick1 or nick1:nick3). If more than one port is specified, then the specified host groups are added to all the ports.

Rules for Creating Host Groups

- You must enable LUN security before using this command (see "[modify lun_security](#)" on page 76).
- Each port can have a maximum of 128 host groups.
- The host group nickname must be unique for the port.
- The host group nickname and WWN nickname should not be the same for the port.
- The host group nickname is mandatory for a host group.
- The host group nickname has a maximum of 8 characters.
- Special characters (such as " ¥ / : , ; * ? " < > | ") are not allowed in the nickname.

Example `create host_group 1A-1D:1F,nick1:nick2
create host_group 1F,nick1:nick2
create host_group 1A-1D:1F,nick1`

create lun

Description This command adds paths in the disk array and allows for the addition of multiple paths in the disk array in one operation using range operators. Each host group on an XP128/XP1024 can have a maximum of 256 paths, while each port can have a maximum of 512 paths. For an XP12000, each host group can have a maximum of 1024 paths, while each port can have a maximum of 1024 paths.

Syntax `create lun <portname...>, <hostgrpnickname...>,
<lunid...>, <cu...>, <ldev...>`

Arguments `<portname...>`

The port from which the path has to be created. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<hostgrpnickname...>`

The host group from which the path has to be created. `<hostgrpnickname>` can be specified as one group nickname or a set of group nicknames (for example, nick1 or nick1:nick3).

`<lunid...>`

The LUN ID to assign to the path being created. `<lunid>` can be specified as one value, a set of values, or a range of values (for example, 1 or 1:3:7 or 1-F). LUN IDs must be given in hexadecimal. Each host group can have a maximum of 256 LUN IDs (1023 for XP12000).

`<cu...>`

The CUs to which paths have to be created. `<cu>` can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal.

`<ldev...>`

This specifies the LDEVs to which paths have to be created. `<ldev>` can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal and are not case sensitive.

The product of the number of values specified in `<hostgrpnickname>` and `<lunid>` should be equal to the product of the number of values specified in `<cu>` and `<ldev>`.

Rules for Creating Paths

- The port type must be Fibre Channel.
- When you want to add an LU path to a host group (other than the default host group), the port security switch must be set to ON.
- The emulation type of the LDEV must be an open system emulation. OPEN-3, OPEN-8, OPEN-9, OPEN-E, OPEN-L and OPEN-V are supported for the CLI.
- A host group can have only one LU path definition for the LDEV.
- When the LDEV is a LUSE volume, you must specify its top LDEV number.
- The range of LU numbers is 0-255.
- The host group can have a maximum of 256 LU paths for an XP128/XP1024 and 1024 LU paths for an XP12000.
- The port can have a maximum of 512 LU paths for an XP128/XP1024 or 1024 LU paths for an XP12000.
- The LDEV must not be an Auto LUN reserved volume.

Example create lun 1A:1B, nick1:nick2, 2:5-7,0,0:5-B creates the following paths in the disk array:

1A	nick1	2	0	0
1A	nick1	5	0	5
1A	nick1	6	0	6
1A	nick1	7	0	7
1A	nick2	2	0	8
1A	nick2	5	0	9
1A	nick2	6	0	A
1A	nick2	7	0	B

1B	nick1	2	0	0
1B	nick1	5	0	5
1B	nick1	6	0	6
1B	nick1	7	0	7
1B	nick2	2	0	8
1B	nick2	5	0	9
1B	nick2	6	0	A
1B	nick2	7	0	B

create wwn

Description Use this command to add WWNs to host groups. Each host group can have up to 255 WWNs and each port can have a maximum of 128 (XP128/XP1024) or 256 (XP12000) host groups. After the WWN is added to the host group, it has access to the LUNs in the host group.

Syntax `create wwn <portname...>, <hostgrpnickname>,
<Wwn~WwnNickname...>`

Arguments `<portname...>`

The port to which the WWNs are to be added. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range. If more than one port is specified, then the WWNs are added to the host group nickname in all the ports.

`<hostgrpnickname>`

The host group to which the WWNs are to be added. Only one `<hostgrpnickname>` can be specified.

`<Wwn~WwnNickname...>`

`<Wwn>` specifies the worldwide name for the host. This must be a 16-digit hexadecimal value, must be unique within the port, and is mandatory.

`<WwnNickname>` is the nickname used for a WWN. WWN nicknames must be unique for a port, and must not be the same as any host group nickname within the port. The nickname is optional.

WWN and its nickname must be separated by a tilde (~). More than one set of `<Wwn~WwnNickname>` pairs can be specified. The WWNs are added to the `<hostgrpnickname>` in all the specified ports.

Rules for Adding WWNs to Host Groups

- You must enable LUN security before using this command (see "[modify lun_security](#)" on page 76).
- Each port can have a maximum of 128 host groups.
- Each port can have a maximum of 255 WWNs.
- Each host group can have a maximum of 255 WWNs.
- The WWN must belong to a host group.
- The WWN must be unique within the port.
- The WWN nickname must be unique within the port.
- The WWN nickname and host group nickname should not be the same within a port.
- The WWN nickname is not mandatory. You can omit it.
- The WWN must be 16 hexadecimal characters.
- The WWN nickname has a maximum length of 8 characters for XP128/XP1024 and 16 characters for XP12000.
- Special characters (such as " ¥ / : , ; * ? " < > | ") are not allowed in the nickname.

Example

```
create wwn 1A,nick1,HJGHHJGHJGH23423~wwnnick1
create wwn 1A,nick1,HJGHHJGHJGH23423~wwnnick1:JJKHKJHHJGH23423~wwnnick2
create wwn 1A:1B,nick1,HJGHHJGHJGH23423~wwnnick1
create wwn 1A:1B,nick1,HJGHHJGHJGH23423~wwnnick1:JJKHKJHHJGH23423~wwnnick2
```

delete host_group

Description Use this command to remove host groups from the disk array. Each port can have up to 128 host groups. This command permits deletion of multiple host groups in one operation. Each host group is specified by its nickname. The default host group in every port cannot be deleted.

If you are using firmware version 21.06.22 or later, you can delete host groups (except for host group 0) with or without the port security turned on.

Syntax `delete host_group <portname...>, <hostgrpnickname...>`

Arguments `<portname...>`

The port from which the host groups are to be deleted. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<hostgrpnickname...>`

The host groups to be deleted. `<hostgrpnickname>` can be specified as one group nickname or a set of group nicknames (for example, nick1 or nick1:nick3). If more than one port is specified, then the specified host groups in all the ports are deleted.

Example

```
delete host_group 1A,nick1
delete host_group 1A:1B,nick1
delete host_group 1A,nick1:nick2
delete host_group 1A:1B,nick1:nick2
delete host_group 1A-1C,nick1:nick2
```

delete lun

Description This command deletes one or more paths in the disk array in one operation. Each path is identified by its port name, host group nickname, LUN ID, CU number, and LDEV number. You can also use this command to delete all paths in specified ports and host groups, or CUs and LDEVs.

If you are using firmware version 21.06.22 or later, you can delete the last path to a command device, and you can delete LUN paths with or without the port security turned on.

Syntax `delete lun [<portname...>, <hostgrpnickname...>, <lunid...>, <cu...>, <ldev...>] | [-port <portname...> -hostgrp <hostgrpnickname...> | -cu <cu...> -ldev <ldev...>]`

Arguments [*<portname...>*]

The port from which the paths are to be deleted. *<portname>* can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

[*<hostgrpnickname...>*]

The host group within the specified port.

[*<lunid...>*]

The LUN ID. LUN IDs must be given in hexadecimal.

[*<cu...>*]

The CU number. For the XP128/XP1024, the CU numbers range from 0 to 31. For the XP12000, CU numbers range from 0 to 63. CU numbers must be displayed in hexadecimal.

[*<ldev...>*]

The LDEV number. LDEVs must be given in hexadecimal.

[*-port <portname...>*]

Deletes all paths to the specified ports. *<portname>* can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range. *-port* without any arguments generates an error. This option cannot be used with the *-cu* and *-ldev* options, but must be used with the *-hostgrp* option. The *-port* option without the *-hostgrp* option will generate an error.

[*-hostgrp <hostgrpnickname...>*]

Deletes all paths assigned to the specified host group defined in the port. *<hostgrpnickname>* can be specified as only one group nickname or a set of group nicknames (for example, nick1 or nick1:nick3). *-hostgrp* without any arguments generates an error. This option cannot be used along with the *-cu* and *-ldev* options, but must be used with the *-port* option. The *-hostgrp* option without the *-port* option will generate an error.

[*-cu <cu...>*]

Deletes all paths to the specified cu. *<cu>* can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal. *-cu* without any arguments generates an error. This option cannot be used along with the *-port* and *-hostgrp* options, but must be used with the *-ldev* option. The *-cu* option without the *-ldev* option generates an error.

Arguments [-ldev <ldev...>]

Deletes all paths to the specified LDEVs. <ldev> can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal and are not case sensitive. -ldev without any arguments generates an error. This option cannot be used along with the -port and -hostgrp options, but must be used with the -cu option. The -ldev option without the -cu option generates an error.

Example

```
delete lun 1A,nick1,0,0,00
delete lun 1A:1B,nick1,0,0,00
delete lun -port 1A:1C -hostgrp nick1
delete lun -cu 0 -ldev 00:01
delete lun -cu 0:1 -ldev 00:01
```

delete wwn

Description Use this command to delete WWNs from host groups. Once the WWN is deleted from a host group it can no longer access the LUNs in that host group.

You can also use this command to delete multiple WWNs in one operation. The WWNs can be deleted using either the WWN or WWN nickname.

If you are using firmware version 21.06.22 or later, you can delete WWNs with or without the port security turned on.

Syntax `delete wwn <portname...> [, <hostgrpnickname> [, <WwnNickname/wwn...>]]`

Arguments `<portname...>`

The ports from which the WWNs are to be deleted. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`[<hostgrpnickname>]`

The host group containing the WWNs. If the host group is not specified, then all the WWNs in the specified ports are deleted. Only one host group can be specified (for example, nick1).

`[<WwnNickname/wwn...>]`

The WWN nickname or WWN to be deleted. One or a set of nicknames can be specified (for example, wwnnick1 or wwnnick1:wwnnick2). WWN must be a 16-digit hexadecimal value. One WWN or a set of WWNs can be specified (for example, wwn1 or wwn1:wwn2).

Example `delete wwn 1A,nick1,JJKHKJHHJGH23423`
`delete wwn 1A,nick1,wwn1:wwn2`

list lun

Description This command displays path related configuration details. Each path is identified by its port name, host group nickname, LUN ID, CU number, and LDEV number. The LUN ID, CU number, and LDEV number are in hexadecimal.

Use `list lun` to query for the following information:

- **PortName.** The port from which the path has been created. Ports in the disk array are identified through their port names (for example, CL1-A and CL1-B).
- **GroupNickName.** The host group from which the path has been created. The XP128/XP1024 support up to 128 host groups for each port; the XP12000 can have a maximum of 256 host groups for each port. Each host group is identified by its nickname. The host group nickname is unique for a port.
- Each port has one default host group, which is always accessible irrespective of the security switch status. An LDEV can have only one path defined from a host group. There cannot be multiple paths to the same LDEV from a host group.
- **LunID.** Each host group can have between 0 to 255 (1023 for XP12000) LUN IDs. LUN IDs are displayed in hexadecimal.
- **CU.** The CU number to which the path has been created. For the XP128/XP1024, the CU numbers range from 0 to 31. For the XP12000, CU numbers range from 0 to 63. CU numbers must be displayed in hexadecimal.
- **LDEV.** The LDEV number to which the path has been created. Each CU can have LDEVs numbered between 0 to 255. LDEV numbers are displayed in hexadecimal.
- **TotalPaths.** The total number of paths that have been assigned to this LDEV.
- **Emulation.** The emulation type of the LDEV to which the path has been created. The CLI displays only open volume emulations.
- **DeviceType.** Specifies whether the LDEV is a command device or not. The possible values are `CmdDev` and `LUN`.
- **Capacity (MB).** The size of the LUN in megabytes.

Syntax `list lun [-port <portname...>]`
`[-hostGrp <hostgrpnickname...>] | [-cu <cu...>]`
`[-ldev <ldev...>] [-cmd <cmdname>] [-category <cmdcategory>]`

Arguments `[-port <portname...>]`

Displays paths for only the specified ports. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range. `-port` without any arguments generates an error.

`[-hostGrp <hostgrpnickname...>]`

Displays the paths for only the specified host groups. `<hostgrpnickname>` can be specified as one host group nickname or a set of host group nicknames (for example, nick1 or nick1:nick3). `-hostGrp` without any arguments generates an error.

`[-cu <cu...>]`

Displays only the paths in the specified CUs. `<cu>` can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal. `-cu` without any arguments generates an error.

Arguments [-ldev <ldev...>]

Displays only the paths to the specified LDEVs. <ldev> can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal and are not case sensitive. -ldev without any arguments generates an error.

If the -ldev option is used with the -cu option, the output will consist of all the paths to the specified LDEV in the specified CUs.

[-cmd <cmdname>] or [-category <cmdcategory>]

Displays the output with the command name or category appended at the beginning of the record with no headers. When used with -csv and -o, the formatted output can be used as input.

Example No options specified

list lun without any options displays all the paths defined in the disk array. Fields are PortName, GroupNickName, LunID, CU, and LDEV.

PortName	GroupNickName	LunID	CU	LDEV
CL1-A	GrpNick1	0	0	00
CL1-B	GrpNick1	1	0	02
CL1-A	GrpNick4	1	0	0A
CL1-E	GrpNick1	0	0	00
CL1-a	GrpNick1	0	0	00

-l option specified

list lun with the -l option displays all the paths defined in the disk array along with the total number of paths to the CU:LDEV, emulation, device type and capacity.

PortName	GroupNickName	LunID	CU	LDEV	TotalPaths	Emulation	DeviceType	CAPACITY
CL1-A	GrpNick1	0	0	00	1	OPEN-E	LUN	30
CL1-B	GrpNick1	1	0	02	1	OPEN-3	LUN	20
CL1-A	GrpNick4	1	0	0A	1	OPEN-E	LUN	35
CL1-E	GrpNick1	0	0	00	1	OPEN-9	LUN	20
CL1-a	GrpNick1	0	0	00	2	OPEN-E	CmdDev	10

All options are specified

If all the options are specified, the output displays the paths from the specified host groups within the specified ports to the specified LDEVs in the specified CUs.

The format of the output is the same as the default output for list lun.

The -l option output is the same as for list lun with the -l option.

list port

Description This command displays the port configuration. Each port in the disk array has the following information associated with it:

- **Portname.** Ports in the disk array are identified by their portname (for example, CL1-A and CL1-B).
- **Type.** The type of port. On the XP128/XP1024/XP12000, the only port type is Fibre Channel.
- **Address.** The port's AL-PA address. This column displays Arbitrated Loop Physical Addresses and loop ID values (for example, EF(0) and E8(1)).
- **Topology.** The topology used by the port. This column displays the Fibre Channel switch status (ON or OFF) and the connection type (FC-AL or point-to-point).
- **WWN.** The port's worldwide name (WWN).
- **Channel Speed.** This is the channel speed of the port. The XP128/XP1024/XP12000 supports three channel speed modes: 1GB fiber, 2GB fiber, and auto mode. If the port is in auto mode, the disk array automatically selects 1GB or 2GB mode.
- **Security.** This displays the LUN security switch status for the port. Security can be either ON or OFF. If the security switch is ON, each WWN can access the LUNs available to the host group it belongs to. If the switch is OFF, host access for all host groups except the default host group is disabled. If you are using firmware version 21.06.22 or later, you can delete host groups (except for host group 0), WWNs, or LUN paths with or without the port security turned on. Only WWNs in the default host group can access the LUNs in that group.
- **HostGroupNickname.** Host groups are used to organize the types of hosts that can access the LUNs. The XP128/XP1024 supports up to 128 host groups for each port; the XP12000 can have a maximum of 256 host groups for each port. Each host group is identified by a nickname. The host group nickname is unique for a port. Also, the first host group in every port is the default host group, which is always accessible irrespective of the security switch status.
- **HostMode.** Host mode is based on the types of host operating systems. Each host group has a one host mode, and only hosts of the one operating system should be members of a host group. Host group members can access the LUNs assigned to that host group.

Syntax `list port [-security -address -topology | -hostgrp]
[-port <portname...>] [-cmd <cmdname>]
[-category <cmdcategory>]`

Arguments [-security]

Displays all port names and their security switch status.

[-address]

Displays all port names and their Fibre Channel addresses (AL-PA and loop ID values).

[-topology]

Displays all port names and their Fibre Channel topologies. The topology column displays the fabric switch status (ON or OFF) and the topology (FC-AL or point-to-point).

[-hostgrp]

Displays all ports, all configured host groups for each port and the host mode name for each host group. This option cannot be used with -address, -topology, or -security.

[-port <portname...>]

Used with other options (-address, -topology, -security, -hostGrp, or only with list port) to display only specific ports. You can specify <portname> as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range. If you use the -port option without a port name, an error message is generated.

[-cmd <cmdname>] or [-category <cmdcategory>]

Displays the output with the command name or category appended at the beginning of the record with no headers. When used with -csv and -o, the formatted output obtained can be used as input.

Example No options

list port without any options displays all port names.

```
PortName
CL1-A
CL1-B
CL1-a
CL1-b
```

-l option

list port with the -l option displays all port names and the information associated with each port (PortName, Type Address, Topology, Wwn, ChannelSpeed, Security).

PortName	Type	Address	Topology	Wwn
ChannelSpeed	Security			
CL1-A	Fibre	EF(0)	Fabric ON & Point-to-Point	wwn1
1GB Fibre	ON			
CL1-B	Fibre	E2(3)	Fabric ON & FC-AL	wwn2
1GB Fibre	ON			
CL1-a	Fibre	73(63)	Fabric OFF & Point-to-Point	wwn3
Auto Mode	ON			
CL1-b	Fibre	EF(0)	Fabric OFF & FC-AL	wwn6
1GB Fibre	ON			

[-security]

```
PortNameSecurity
CL1-A    ON
CL1-B    OFF
CL1-a    OFF
CL1-b    ON
```

The -l option produces the same output as list port -l.

Example [-address]

PortName	Address
CL1-A	EF(0)
CL1-B	E2(3)
CL1-a	73(63)
CL1-b	EF(0)

The -l option produces the same output as `list port -l`.

[-topology]

PortName	Topology
CL1-A	Fabric ON & Point-to-Point
CL1-B	Fabric OFF & Point-to-Point
CL1-a	Fabric ON & FC-AL
CL1-b	Fabric OFF & FC-AL

The -l option produces the same output as `list port -l`.

[-hostgrp]

PortName	HostGroupNicknameHostModeName
CL1-A	nick1Standard
CL1-B	nick2HP
CL1-a	nick1Standard

The -hostGrp -l option displays all ports, all configured host groups for each port, the host mode name for each host group, and the host mode number. This option cannot be used with -address, -topology, or -security.

PortName	HostGroupNicknameHostModeHostModeName
CL1-A	nick100 Standard
CL1-B	nick208 HP
CL1-a	nick100 Standard

[-port <portname...>]

The format of the output is the same as the default output for `list port` or `list port` with -security, -address, -topology, or -hostGrp. The output reflects only the specified ports.

```
list port -security -port 1A:1C:1a-1e
PortName Security
CL1-A      ON
CL1-C      ON
CL1-a      OFF
CL1-b      ON
CL1-c      OFF
CL1-d      ON
CL1-e      ON
```

The -l option produces output that is dependent on the options used. The format of the output is the same as the output for `list port -l`, `list port -l` with -security, -address, -topology, -hostGrp, etc., if used with those options. The key point is that the output displays only the specified ports.

list wwn

Description This command displays the WWN information for the hosts that can access the LUNs. Each host connected to the disk array is identified by its WWN.

WWNs are added to host groups within the ports, and all WWNs assigned to a host group can access the LUNs in that host group. If you are using a firmware version before version 21.06.22, the LUN accessibility by the hosts is also limited by the ports security switch. The WWNs can access the LUNs only if the security switch of the ports is ON. When the port security switch is OFF, only WWNs connected to the default host group can access the LUNs.

If you are using firmware version 21.06.22 or later, you can delete host groups (except for host group 0), WWNs, or LUN paths with or without the port security turned on.

Use `list wwn` to query the WWNs in the host groups and ports for the following information items.

- **Portname.** This is the name of the port to which the WWNs are assigned. Ports in the disk array are identified through their port name (for example, CL1-A and CL1-B).
- **WWN.** The worldwide name for the host. There can be a maximum of 255 WWNs defined for a port.
- **WWNNickname.** The nickname used for each WWN. WWN Nicknames must be unique for a port. If the nickname is not specified, then this column is null.
- **HostGroupNickName.** The host group to which the WWN has been assigned. Host groups identify the type of hosts that can access the LUNs. The XP128/XP1024 supports up to 128 host groups for each port; the XP12000 can have a maximum of 256 host groups for each port. Each host group is identified by its nickname. The host group nickname is unique for a port. The first host group in each port is also the default host group. Each port has at least one host group, known as the default host group, which is always accessible irrespective of the security switch status.

Syntax `list wwn [-port <portname...>]`
`[-hostGrp <HostGrpNickName...>] [-cmd <cmdname>]`
`[-category <cmdcategory>]`

Arguments `[-port <portname...>]`

Displays the WWNs for only the specified ports. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range. `-port` without any arguments generates an error.

`[-hostGrp <HostGrpNickName...>]`

Displays the WWNs for the specified host groups. `<HostGrpNickname>` can be specified as one group nickname or a set of group nicknames (for example, nick1 or nick1:nick3). `-hostGrp` without any arguments generates an error.

`[-cmd <cmdname>] or [-category <cmdcategory>]`

Displays the output with the command name or category appended at the beginning of the record with no headers. When used with `-csv` and `-o`, the formatted output obtained can be used as input.

Example `list wwn` without any options displays all the WWNs configured in the disk array.

PortName	Wwn
CL1-A	HJGHHJGHJGH23423
CL1-A	JJKHKJHHJGH23423
CL1-B	HJhfhdsHJGH878JK
CL1-B	HJGHHJGHJGH23423
CL1-B	JJKHKJHHJGH23423
CL1-B	JHNJYGJHHHJGHJJH

The `-l` option output displays all the WWNs configured in the disk array along with the host group nickname and WWN nickname.

PortName	HostGrpNickName	Wwn	WwnNickName
CL1-A	grpnick1	HJGHHJGHJGH23423	wwn1
CL1-A	grpnick2	JJKHKJHHJGH23423	wwn2
CL1-B	grpnick3	HJhfhdsHJGH878JK	wwn3
CL1-B	grpnick4	HJGHHJGHJGH23423	wwn4
CL1-B	grpnick5	JJKHKJHHJGH23423	wwn5
CL1-B	grpnick6	JHNJYGJHHHJGHJJH	wwn6

modify cmd_device

Description Use this command to:

- Set an LDEV as a command device
- Release an existing command device
- Enable (set ON) command device security
- Disable (set OFF) command device security

If you are using firmware version 21.06.22 or later, you can set or release a command device without a path.

Syntax `modify cmd_device -set <cu...>,<ldev...>
-security ON|OFF | -release <cu...>,<ldev...>`

Arguments `-set <cu...> or -release <cu...>`

The CU whose LDEV is to be set or released as a command device. `<cu>` can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal.

`-set <ldev...> or -release <ldev...>`

The LDEV that is to be set or released as a command device. `<ldev>` can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal and are not case sensitive.

If more than one CU is specified, the specified LDEVs in all the specified CUs are modified.

`-security ON|OFF`

This option enables (sets ON) or disables (sets OFF) the command device security switch. The number of switches specified should be equal to the number of LDEVs specified. If only one switch is specified, all the LDEVs are assigned the specified switch value. If the number of switches specified is equal to the number of LDEVs, then there is a one-to-one correspondence between the LDEVs and the values. In all other cases this command generates an error. This option can be used only with `-set` option.

Example

```
modify cmd_device -set 0,00
modify cmd_device -set 0,00:01
modify cmd_device -set 0,00 -security ON
modify cmd_device -set 0,00:01 -security OFF
modify cmd_device -release 0,01 -security ON,OFF
modify cmd_device -set 0:1,00
```

modify fibre_address

Description Use this command to modify port addresses. It is available for fibre ports only.

Syntax `modify fibre_address <portname...>, <address...>`

Arguments `<portname...>`

The port whose address is to be modified. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<address...>`

The addresses to be set. The fibre addresses are specified as AL-PA values. The number of values specified should be equal the number of port names specified. If only one address is specified, all the ports are assigned addresses consecutively starting from the address specified. If the number of values specified is equal to the number of port names, then there is a one-to-one correspondence between the port names and the addresses. In other cases this command generates an error.

Example `modify fibre_address 1A,EF`
`modify fibre_address 1A:1B-1E,EF`
`modify fibre_address 1A:1B,EF:E2`

modify fibre_topology

Description This command modifies the port topologies. It is available for fibre ports only.

Syntax `modify fibre_topology <portname...>, <topology...>`

Arguments `<portname...>`

The ports whose topologies are to be modified. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<topology...>`

The topologies to be set. Fibre topologies are specified in the range between 1 to 4. The number of values specified should be equal to the number of port names specified. If only one topology is specified, all the ports are assigned the specified topology. If the number of values specified is equal to the number of port names, then there is a one-to-one correspondence between the port names and the topologies. In other cases this command generates an error.

Example

```
modify fibre_topology 1A,1
modify fibre_topology 1A:1B-1E,2
modify fibre_topology 1A:1B,1:2
```

modify host_group

Description This command modifies the host group nickname for a port. You must enable LUN security before using this command (see "[modify lun_security](#)" on page 76).

Syntax `modify host_group <portname>, <OldHostGrpNickname>,
<NewHostGrpNickname>`

Arguments `<portname>`

The ports whose host group is to be modified. Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<OldHostGrpNickname>`

The host group nickname that is to be modified. Only one `<OldHostGrpNickname>` can be specified (for example, nick1).

`<NewHostGrpNickname>`

The new host group nickname to be set. Only one `<NewHostGrpNickname>` can be specified (for example, nick2).

Example `modify host_group 1A,nick1,nick2`

modify host_mode

Description Use this command to modify the host mode for a host group in a port and to modify host modes for multiple host groups in one operation.

To perform the modify host_mode operation, the security switch must be set to ON for host groups, except for host group 0.

Syntax `modify host_mode <portname...>, <HostGrpNickname...>, <HostMode...>`

Arguments `<portname...>`

The port that contains the host groups. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1B or 1A-1C). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<HostGrpNickname...>`

The host group nicknames whose host modes are to be modified. `<HostGrpNickname>` can be specified as one group nickname or a set of group nicknames (for example, nick1 or nick1:nick3). If more than one port name is specified, then the specified host groups in all the ports are modified.

`<HostMode...>`

The new host mode to be set. `<HostMode>` can be specified as one value or a set of values (for example, 08 or 00:08). If only one host mode is specified, all the host groups are assigned the host mode specified. If the number of values specified is equal to the number of groups, then there is a one-to-one correspondence between the host groups and the host modes. In other cases this command generates an error. The following host mode values are supported for the XP128/XP1024:

- 00: Standard
- 04: Sequent
- 08: HP-UX
- 09: VxVM-DMP
- 0A: NetWare
- 0C: MS Cluster Server
- 0D - 0F: Reserved

The following host mode values are supported for the XP12000:

- 00: Standard
- 04: Sequent
- 05: OPEN-VMS
- 07: Tru64 mode
- 08: HP-UX
- 09: SVxVM-DMP
- 0A: NetWare
- 0C: MS Cluster Server Multi-Path

Example `modify host_mode 1A,nick1,00`
`modify host_mode 1A,nick1:nick2,00`

modify lun_security

Description This command enables (ON) or disables (OFF) the port security switch.

Syntax `modify lun_security <portname...>, ON|OFF`

Arguments `<portname...>`

The ports whose security switch is to be modified. `<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`ON|OFF`

The switch value. The security switch can be ON or OFF. The number of values specified should be equal to the number of port names specified. If only one switch value is specified, all the specified port names are set to this value. If the number of values specified is equal to the number of port names, then there is a one-to-one correspondence between the port names and the switches. In other cases this command generates an error.

Example

```
modify lun_security 1A,OFF
modify lun_security 1A:1B-1F,ON
modify lun_security 1A:1B,OFF:ON
```

modify wwn

Description Use this command to modify the WWN and WWN nickname of a host. You must enable LUN security before using this command (see [modify lun_security](#), page 76).

Syntax `modify wwn <portname>, <HostGrpNickName>, <oldwwn/oldwwnNickName>
[-wwn <newWwn> | -nickname <newWwnNickName>]`

Arguments `<portname>`

The port whose WWN or WWN nickname is to be modified. `<portname>` must be specified as one port. Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range.

`<HostGrpNickName>`

The host group nickname whose WWN or WWN nickname is to be modified. Only one `<hostgrpnickname>` can be specified.

`<oldwwn/oldwwnNickName>`

The WWN or WWN nickname whose WWN or WWN nickname has to be modified. Only one `<oldwwn/oldwwnNickName>` can be specified.

`[-wwn <newWwn>]`

Modifies the WWN value (the worldwide name value for the host). This must be a 16-digit hexadecimal value and must be unique within the port. `-wwn` must be specified if `-nickname` is not specified, and cannot be used with `-nickname`.

`[-nickname <newWwnNickName>]`

Modifies the WWN nickname. `WwnNickname` is the nickname used for a WWN. WWN nicknames are unique for a port, and must not be the same as any host group nickname within the port. `-nickname` must be specified if `-wwn` is not specified, and cannot be used with `-wwn`.

Example

```
modify wwn 1A,nick1,wwnnick1 -wwn JJKHKJHHJGH23423
modify wwn 1A,nick1,wwnnick1 -nickname wwnnick1
```

Volume management commands

This section describes the following commands:

- [create custom_ldevs](#), page 79
- [create luse](#), page 81
- [delete ldevs](#), page 84
- [delete luse](#), page 85
- [initialize vdev](#), page 86
- [list ldev](#), page 87
- [list luse](#), page 91
- [list openv_util](#), page 93
- [list parity_group](#), page 95
- [list usable_cus](#), page 98
- [list vsc](#), page 99
- [make volumes](#), page 101,

create custom_ldevs

Description This command creates new custom LDEVs and can be executed depending on the amount of free space present in the VDEV. You can display a list of available free spaces in the VDEV by using the `list parity_group -fs` command.

You must supply an LDEV ID when you create custom LDEVs. You can list unused LDEV IDs with the `list vsc -unused` command.

The new custom LDEVs that are created have the same emulation type and LDEV size, and are only for one domain, parity group, and VDEV. If you want to create custom LDEVs over multiple domains, parity groups, and VDEVs, with different emulation types and LDEV sizes, consider using a batch file containing multiple `create custom_ldevs` commands.

NOTE: This command is not supported for the OPEN-V emulation type on XP128/XP1024/XP12000 arrays. Use the `make volumes` command (page 101) instead.

Syntax `create custom_ldevs <domain>, <PG>, <vdev>,
<emulation_type>, <ldev_size>, <cu_ID...>,
<ldev_ID...>`

Arguments `<domain>`

The domain for the new custom LDEV.

`<PG>`

The parity group number for the new custom LDEV.

`<vdev>`

The VDEV for the new custom LDEV.

`<emulation_type>`

The emulation type of the new custom LDEV. Other emulation types, such as OPEN-3, OPEN-9, OPEN-8, or OPEN-E, can be mixed if the base emulation type of the VDEV is one of these emulation types. To list the emulation type of the VDEV, execute `list parity_group -emulation`.

`<ldev_size>`

The size of the new custom LDEV. The minimum size is 36 MB. You must specify the size of the LDEV in KBs. The following are the maximum sizes that you can assign to an LDEV for a particular emulation type.

OPEN-3: 2347 MB

OPEN-8: 7007 MB

OPEN-9: 7042 MB

OPEN-E: 13893 MB

`<cu_ID...>`

The CU ID for the new custom LDEV. CUs must be given in hexadecimal. You can enter a single value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4).

`<ldev_ID...>`

The LDEV ID for the new LDEV. The LDEV ID must be given in hexadecimal and is not case sensitive. You can enter a single value, a set of values, or a range of values (for example, 01-03 or 01:02:04-06:0B).

Example `create custom_ldevs 1, 1, 1, OPEN-3, 500, 00:01, 00:02-04:0D`

Domain	PG	VDev	CU	LDev	EmulationType	LdevSize
1	1	1	00	00	OPEN-3	500
1	1	1	00	02	OPEN-3	500
1	1	1	00	03	OPEN-3	500
1	1	1	00	04	OPEN-3	500
1	1	1	00	0D	OPEN-3	500
1	1	1	01	00	OPEN-3	500
1	1	1	01	02	OPEN-3	500
1	1	1	01	03	OPEN-3	500
1	1	1	01	04	OPEN-3	500
1	1	1	01	0D	OPEN-3	500

create luse

Description Use this command to create expanded volumes in the disk array. Each LUSE volume can have 2 to 36 LDEVs. This command allows for the creation of only one LUSE volume in one operation.

A LUSE volume can be created in one of two modes: *continuous* or *disperse*. Optionally, one or more paths can be defined for the LUSE.

The existing LUSE volumes can be further expanded to form a larger volume. The LDEV IDs that would be used for further expansion need to be greater than the base LUSE volume. The device LDEVs, which will be used for expansion, can also be LUSE volumes.

Syntax `create luse <topCU>, <topLdev> -continuous <offset> | -disperse
<device_ldevs...> [-lun <port...>,<hostgrpnickname>,<lunid>]`

Arguments `<topCU>`

The CU number of the first LDEV in the expanded volume. `<topCU>` must be given in hexadecimal.

`<topLdev>`

The LDEV of the first LDEV in the expanded volume. `<topLdev>` must be given in hexadecimal and is not case sensitive.

`-continuous <offset>`

Use this option to create the expanded volume in continuous mode. `<offset>` specifies the total number of consecutive LDEVs that will be combined into one volume. `<offset>` does not include the top LDEV. The possible range for `<offset>` is 1 - 35. This option cannot be used with the `-disperse` option.

`-disperse <device_ldevs...>`

Use this option to create the expanded volume in disperse mode. `<device_ldevs>` specifies the list of LDEVs to be expanded into one volume. `<device_ldevs>` can be a set of values or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal and are not case sensitive. This option cannot be used with the `-continuous` option.

`[-lun <portname...>,<hostgrpnickname>,<lunid>]`

The `-lun` option specifies the paths to the LUSE volume. It is not mandatory. It is possible to create an expanded volume without any associated path.

`<portname>`, `<hostgrpnickname>`, `<lunid>` specify the complete path.

`<portname>` can be specified as one port, a set of ports, or a range of ports (for example, 1A or 1A:1C:1D or 1A-1E). Port names must be specified in truncated form (for example, 1A and not CL1-A) because the hyphen (-) is used to specify a range. LUN IDs must be given in hexadecimal.

Rules for creating a LUSE volume

- The LDEVs in a LUSE volume must be in same CU.
- The LDEVs in a LUSE volume cannot already have a path.
- The LDEVs in a LUSE volume must be of the same emulation type.
- The LDEVs in a LUSE volume must be the same RAID level.
- Emulation types of the LDEVs in a LUSE volume must be OPEN-3, OPEN-8, OPEN-9, OPEN-E, OPEN-L, or OPEN-V.
- You can combine custom volumes into LUSE volumes. However, the custom volumes must be same size.
- LDEVs set as Auto LUN reserved volumes for cannot be used as part of a LUSE volume.
- The CU:LDEV number of a LUSE volume the CU:LDEV number of the top LDEV.
- The top LDEV must have the numerically smallest CU:LDEV number in the LUSE volume.

Example Using the continuous offset option

```
create luse topCU, topLDev -continuous offset [-lun <port...>
,hostgrpnickname, lunid]
```

To use this option, provide the top LDEV and an offset that specifies how many subsequent LDEVs to append to the top LDEV to create a LUSE volume.

- If the top LDEV is an existing LUSE volume and the LDEVs under the offset are not LUSE volumes:
The new LUSE volume will be formed by combining the LDEVs of the existing top LUSE and the subsequent ascending LDEVs. The total number of LDEVs in the new LUSE volume will equal the value of (offset+1).
- If the top LDEV is not a LUSE volume and some of the remaining LDEVs under the offset contain LUSE volumes:
The new LUSE volume will be formed by combining the top LDEV and the LDEVs of the existing subsequent LUSE volumes and subsequent ascending normal LDEVs until the total number of LDEVs in the new LUSE volume equals (offset+1).
- If the top LDEV is an existing LUSE volume and some of the remaining LDEVs under the offset contain LUSE volumes:
The new LUSE volume will be formed by combining the LDEVs of the existing top LUSE, and the LDEVs of the already existing subsequent LUSES and ascending LDEVs. The total number of LDEVs in the new LUSE volume equals (offset+1).

If the offset value is such that part of an existing LUSE must be broken to form a new LUSE, the following error message appears: The existing LUSES that are to be further expanded must be of type "continuous LUSE".

The following examples refer to an array in which (0:0, 0:1) is a LUSE volume, (0:2, 0:3) is a LUSE volume, and (0:4) is a normal LDEV.

Example 1

```
create luse 0,0 -continuous 4
```

This command creates a new LUSE volume of size 5 (offset+1).

Since there are two continuous LUSES present, this command considers all four of the LDEVs in those LUSES. To complete the request, the four LDEVs in the LUSES are combined with one normal LDEV to form a new LUSE. The new LUSE will be composed of five continuous LDEVs (0:0, 0:1, 0:2, 0:3, 0:4).

Example 2

```
create luse 0,0 -continuous 2
```

To complete this request, the second LUSE (0:2, 0:3) must be broken into individual LDEVs to accommodate the LDEV (0:2) to be joined with (0:0, 0:1). In this case an error message occurs because reducing the size of an LUSE is not allowed.

If (0:0, 0:1) is not a continuous LUSE, for example, if it is made of (0:0, 0:3), an error message appears.

Using the disperse option

```
create luse topCU, topLDev -disperse <deviceLDevs...> [-lun <port...> ,  
hostgrpnickname, lunid]
```

To use this option, provide the top LDEV and the individual device LDEVs to combine. The top LDEV, device LDEVs, or both can be LUSE volumes. The new LUSE will be composed of all the individual LDEVs of input LUSEs.

Restriction

The CU: LDEV number of additional LDEVs must be larger than the last CU:LDEV number of an existing LUSE volume.

Example

If LUSE (0:0, 0:1) is specified as the top LDEV and (0:2, 0:3) is specified as device LDEV, the new LUSE will be composed of (0:0, 0:1, 0:2, 0:3).

If LUSE (0:0, 0:2) is specified as the top LDEV and (0:1, 0:3) is specified as device LDEV, the operation will fail because it violates the restriction above.

delete ldevs

Description This command converts custom LDEVs or normal LDEVs into free space. This command cannot convert the last normal LDEV to free space. The LDEVs to be deleted should not have path added to itself, not be a part of LUSE volume, not be a command device and should not be an Auto LUN reserved volume.

The list of LDEVs that can be deleted can be obtained by executing the command `list vsc -deletable`.

Syntax `delete ldevs <domain>, <PG>, <vdev>, <cu...>, <ldevID...>`

Arguments `<domain>`

The domain for which the deletion of LDEVs is to be done.

`<PG>`

The PG for which the deletion of LDEVs is to be done. To delete LDEVs for multiple PGs in a domain, create a command file and use the `-f <filename>` option.

`<vdev>`

The VDEV for which the deletion of LDEVs is to be done. To delete multiple VDEVs, create a command file and use the `-f <filename>` option.

`<cu...>`

The CU ID of the LDEVs to be deleted. The CU must be given in hexadecimal. You can enter a single value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4).

`<ldevID...>`

The LDEV ID of the LDEV to be deleted. LDEV IDs must be given in hexadecimal and are not case sensitive. You can enter a single value, a set of values, or a range of values (for example, 01-03 or 01:02:04-06:0B).

Example `delete ldevs 1, 1, 1, 00:01, 00:02-04:0D`
deletes the following LDEVs:

Domain	PG	VDev	CU	LDev
1	1	1	00	00
1	1	1	00	02
1	1	1	00	03
1	1	1	00	04
1	1	1	00	0D
1	1	1	01	00
1	1	1	01	02
1	1	1	01	03
1	1	1	01	04
1	1	1	01	0D

delete luse

Description This command releases expanded volumes. This command allows for the release of multiple LUSEs in one operation.

Syntax `delete luse <topCU...>, <topLDev...>`

Arguments `<topCU...>`

The CU number of the expanded volume. `<topCU>` can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal.

`<topLDev...>`

The LDEV number of the expanded volume. `<topLDev>` can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal and are not case sensitive.

If more than one `<topCU>` is specified, then all the specified expanded volumes in all the specified CUs are released.

Example `delete luse 0,00`
`delete luse 0,00:03`

initialize vdev

Description Use this command to regain the initial configuration of the VDEV. This operation deletes all the custom volumes created on this VDEV and creates the normal LDEVs deleted by the user.

A custom LDEV, if present, is deleted. These custom LDEVs cannot have a path assigned, be a part of a LUSE volume, be a command device, or be part of an Auto LUN reserved volume.

You need to enter the exact number of LDEV IDs. This count can be determined by executing the command `list parity_group -initializecount`, and is the number of normal volumes deleted on this VDEV.

NOTE: This command is not supported for the OPEN-V emulation type on XP128/XP1024/XP12000 arrays. Use the `make volumes` command (page 101) instead.

Syntax `initialize vdev <domain>, <PG>, <vdev>, <cu(ldev...)...>`

Arguments `<domain>`

The domain present in the disk array.

`<PG>`

The parity group present in the disk array.

`<vdev>`

The VDEV in the disk array for which the initialization is desired.

`<cu(ldev...)...>`

The IDs of the new normal LDEVs to be created. The format of the CU:LDEV combination is unique for this command and should be used only for this command. For each CU value, specify which LDEVs you want to use. You can repeat this for multiple CUs, but the CU number should not be repeated. CUs and LDEVs must be given in hexadecimal.

- To create LDEVs with CU:LDEV IDs 00:00, 01:00, 02:00 and 03:00, use:
00(00):01(00):02(00):03(00)
- To create LDEVs with CU:LDEV IDs 00:00, 00:01, 00:02, 00:03, 01:00 and 01:02, use:
00(00-03):01(00:02)
- To create LDEVs with CU:LDev IDs 00:01, 00:03, 00:05, 00:0D, 03:0A and 03:0C, use:
00(01:03-05:0D):03(0A-0C)

Example After a successful initialize operation, the following new normal LDEVs are created.

```
initialize vdev 1,1,1, 00(00-03):01(0A-0C):03(f0:ff)
Domain    PG    VDev    CU    LDev
1         1     1       00    00
1         1     1       00    01
1         1     1       00    02
1         1     1       00    03
1         1     1       01    0A
1         1     1       01    0B
1         1     1       01    0C
1         1     1       03    f0
1         1     1       03    ff
```

list ldev

Description This command displays logical device configuration details. Each LDEV is identified by the CU number it belongs to and an LDEV number. CU number and LDEV numbers are represented in hexadecimal.

Use `list ldev` to query the following items:

- **Domain.** The domain to which this LDEV's parity group belongs. Also referred to as FB4 number. The number of domains in the arrays is as follows:
 - XP128: 1 or 2 domains
 - XP1024: 8 domains
 - XP12000: 18 domains
- **PG.** The parity group number to which this LDEV belongs. The XP128/XP1024 has between 1 and 32 parity groups per domain. The XP12000 has between 1 and 16 parity groups per domain.
- **VDEV.** The subdivision of PG. It depends on the RAID level of the parity group and hard disk capacity. The XP128/XP1024 can have 1 to 16 VDEVs per PG. The XP12000 can have 1 to 18 VDEVs per PG.
- **CU.** The CU number to which the LDEV belongs to. With the XP128/XP1024, the CU ranges from 0 to 31. For the XP12000, the CU ranges from 0 to 63.
- **LDEV.** The LDEV number. Each CU can have LDEVs numbered between 0 to 255. LDEV numbers are displayed in hexadecimal.
- **Emulation.** The emulation type of the LDEV. The CLI displays only open volume emulations. For LUSE volumes, the emulation type is displayed as OPEN-X * n, where n represents the total number of LDEVs that comprise the LUSE volume.
- **ExpansionStatus.** The expansion status of the LDEV. An LDEV can be in one of three states: a single LDEV ("NOT EXPANDED"), first LDEV in an expanded volume ("EXPANDED TOP"), or a part of the expanded volume ("EXPANDED NON TOP").
- **LUSECount.** The number of LDEVs that constitute an expanded volume, including the top LDEV. LUSECount is displayed only for volumes that are top LDEVs in expanded volumes. The value displayed will be between 2 – 36 for "EXPANDED TOP" LDEVs, depending on the number of LDEVs present. For "NON TOP EXPANDED" LDEVs and "NOT EXPANDED" LDEVs, the value is displayed as "-".
- **TotalPaths.** The total number of paths that have been assigned to an LDEV. "0" indicates that there is no path currently defined for an LDEV.
- **Capacity (MB).** The size of the LDEV in megabytes.
- **Reserved.** Displays whether the LDEV is a reserved or normal volume. Reserved volumes are used by Auto LUN for data migration. The possible values for this column are "RESERVED" and "NORMAL."
- **DeviceType.** Displays whether the LDEV is a command device or not. The possible values are CmdDev and LUN.
- **CmdDevSecurity.** Displays whether command device security is switched ON or OFF. This is applicable only for LDEVs designated as command devices. The possible values are ON and OFF. For all other devices, this value is N/A.
- **RAID.** Displays the RAID level of the parity group to which this LDEV belongs. The supported RAID levels are RAID1 and RAID5.
- **LDevType.** Displays the kind of LDEV (custom or normal LDEV).

Syntax `list ldev [-cmddev | -lu | -unallocated]
[-emulation <emulation_type...>] [-ldev <ldev...>] [-cu <cu...>]`

Arguments [-cmddev]

Displays only the LDEVs that have been designated as command devices. This option also displays whether the command device security status is set to ON or OFF. This option cannot be used with the -lu and -unallocated options.

[-lu]

Displays the LDEVs that are not expanded ("NOT EXPANDED") and the top LDEVs in expanded volumes ("EXPANDED TOP"). This option cannot be used with the -cmddev and -unallocated options.

[-unallocated]

Displays all LDEVs that do not have any paths defined. This option cannot be used with the -cmddev and -lu options.

[-emulation <emulation_type...>]

Used with other options or alone to display only LDEVs with the specified emulation types. <emulation_type> can be specified as one value or a set of values (for example, OPEN-E or OPEN-E:OPEN-3). -emulation used without any arguments generates an error.

[-ldev <ldev...>]

Displays only the specified LDEVs. <ldev> can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be specified in hexadecimal and are not case sensitive. -ldev without any arguments generates an error.

If the -ldev option is used along with -cu, the output displays the specified LDEVs in the specified CUs. If any of the specified LDEVs do not exist, then those LDEVs are not displayed.

[-cu <cu...>]

Displays only the LDEVs in the specified CUs. <cu> can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal. -cu without any arguments generates an error.

Example list ldev without any options displays all the LDEVs defined in the disk array.

CU	LDEV
00	00
00	0A
00	0B
00	0C

list ldev with the -l option displays all the LDEVs defined in the disk array, along with the configuration information associated with each LDEV: CU, LDEV, Emulation, ExpansionStatus, Count, Raid, Paths, Capacity, Reserve, DeviceType, and CmdDevSecurity.

CU	LDEV	Emulation	ExpansionStatus	LUSECount	Raid	Paths	Capacity	Reserve
DeviceType	CmdDevSecurity							
0 00	OPEN-E	EXPANDED_TOP	3	RAID1	2	2347	Normal	
Lun	OFF							
0 01	OPEN-9	NOT_EXPANDED	-	RAID1	2	2347	NORMAL	
CmdDev	ON							

[-cmddev]

Displays all the command devices and their security switch status. For example, CU, LDEV, DeviceType, and CmdDevSecurity.

CU	LDEV	DeviceType	CmdDevSecurity
0	08	CmdDev	ON
0	0F	CmdDev	OFF

Example [-lu]

Displays only the "NOT EXPANDED" and the "EXPANDED TOP" LDEVs and the count.

CU	LDEV	Count
0	08	2
0	0F	6

[-unallocated]

The output format is the same as the default output for `list ldev`.

The `-l` option output is the same as the default output for `list ldev` with the `-l` option.

[-emulation <emulation type...>]

The output displays only the LDEVs with the specified emulation types.

`list ldev -emulation OPEN-E:OPEN-3` displays:

CU	LDEV	Emulation
0	00	OPEN-E
0	01	OPEN-E
0	0A	OPEN-3
0	0B	OPEN-3

`list ldev -lu -emulation OPEN-E:OPEN-3` displays:

CU	LDEV	Count	Emulation
0	08	2	OPEN-E
0	0F	6	OPEN-3

`list ldev -cu 0 -ldev a-f -emulation OPEN-E:OPEN-3` displays:

CU	LDEV	Emulation
0	00	OPEN-E
0	01	OPEN-E
0	0A	OPEN-3
0	0B	OPEN-E

[-ldev <ldev...>]

If a disk array has LDEVs A to F in CU 0, and LDEVs A, B, D and E in CU 1, then `list ldev -cu 0:1 -ldev A-F` displays:

CU	LDEV
0	A
0	B
0	D
0	E
0	F
0	A
1	B
1	D
1	E

In the previous example, LDEVs 1:C and 1:F are not displayed because they do not exist.

The output format is the same as the default output for `list ldev` and `list ldev` with `-cmddev`, `-lu`, `-ldev`, or `-emulation`, if those options are used. The output displays only the specified LDEVs.

The `-l` option output depends on the options used. The output format is the same as the output for `list ldev -l` and `list ldev -l` with `-cmddev`, `-lu`, `-ldev`, or `-emulation`, if those options are used. The output displays only the specified LDEVs.

Example [-cu <cu...>]

The output format is the same as the default output for `list ldev` and `list ldev` with `-cmddev`, `-lu`, `-ldev`, `-emulation`, if those options are used. The output displays only the LDEVs in the specified CUs.

The `-l` option output depends on the options used. The output format will be the same as the output for `list ldev -l` and `list ldev -l` with `-cmddev`, `-lu`, `-ldev`, `-emulation`, if those options are used. The output displays only the LDEVs in the specified CUs.

list luse

Description This command displays LUSE configuration details. A LUSE volume consists of more than one LDEV. The LUSE volume can be expanded in either of two modes: *continuous*, where the LDEVs are consecutive, and *disperse*, where the LDEVs are non-consecutive. All LDEVs in a LUSE volume must be in the same CU. CU number and LDEV number are represented in hexadecimal.

Use `list luse` to query for the following information:

- **CU.** The CU number of the expanded volume. CU numbers are displayed in hexadecimal.
- **LDev.** The first LDEV number in the expanded volume. LDEV numbers are displayed in hexadecimal.
- **DeviceLDEVs.** The list of LDEVs, except the first LDEV, in the expanded volume.
- **TotalPaths.** The total number of paths that have been assigned to this LUSE.
- **Emulation.** The emulation type of this LUSE. The CLI displays only open volume emulations.
- **Reserved.** Specifies whether the LUSE is a reserved or normal volume. Reserved volumes are used by Auto LUN for data migration. The possible values for this column are "RESERVED" and "NORMAL."
- **DeviceType.** Specifies whether the LUSE is a command device or not. The possible values are "CmdDev" and "LUN."
- **Capacity (MB).** This specifies the size of the LUSE in megabytes.

Syntax `list luse [-cu <cu...>] [-ldev <ldev...>] [-cmd <cmdname>]
[-category <cmdcategory>]`

Arguments `[-cu <cu...>]`

Displays only the LUSE volumes in the specified CUs. `<cu>` can be one value, a set of values, or a range of values (for example, 0 or 0:2:3 or 0-4). CUs must be given in hexadecimal. `-cu` without any arguments generates an error.

`[-ldev <ldev...>]`

Displays only those LUSE volumes whose top LDEV matches any of the LDEVs specified. `<ldev>` can be one value, a set of values, or a range of values (for example, A or 0:A:1A or 0-F). LDEVs must be given in hexadecimal. `-ldev` without any arguments will generate an error.

`[-cmd <cmdname>] or [-category <cmdcategory>]`

Displays the output with the command name or category appended at the beginning of the record with no headers. When used with `-csv` and `-o`, the formatted output can be used as input.

Example `list luse` without any options displays all the expanded luns defined in the disk array.

CU	LDEV	DeviceLDEVs
0	00	01,02,03
0	0A	0B,0D,0E,0F

The `-l` option output displays all the expanded luns defined in the disk array along with the total number of paths to this LUSE, emulation type, reserved status, device type, and capacity.

CU	LDEV	DeviceLDEVs	TotalPaths	Emulation	Reserve	DeviceType	CAPACITY
0	00	01,02,03	0	OPEN-E	RESERVE	LUN	40
0	0A	0B,0D,0E,0F	2	OPEN-3	NORMAL	CmdDev	10

`[-cu <cu...>]`

The output format is the same as the output for `list luse`.

The `-l` option output is the same as for `list luse` with the `-l` option.

`[-ldev </dev...>]`

The output format is the same as the default output for `list luse`.

The `-l` option output is the same as for `list luse` with the `-l` option.

If the `-ldev` option is used with the `-cu` option, the output consists of all the specified LUSEs in the specified CUs.

list openv_util

Description Use this command to calculate the number of LDEV IDs to pass when using the `make volumes` command (page 101) to create OPEN-V volumes in a VDEV.

For XP 128/1024 arrays, if the volume to be created is larger than 60 GB the DKC creates a LUSE volume of equally sized custom volumes. The resulting emulation type is OPEN-V * n (where n is the size of the LUSE volume). In this case you must pass *n* number of unused LDEV IDs to the `make volumes` command to create one volume. To create *m* volumes larger than 60 GB, pass *m*n* number of LDEV IDs to the `make volumes` command.

- This command is supported for OPEN-V LDevs on XP128, XP1024, and XP12000 arrays.
- This is a utility command that does not support common options such as `-csv [-l | -col <columns...>] -sa <column> -sd <column> -o <outputfilename> |more | /p`.
- All of the `list openv_util` arguments are required.

Use `list openv_util` to query for the following information:

- **LdevCount.** The number of unused LDEV IDs to pass to the `make volumes` command.
- **OPEN-V Size.** The size of the new volumes to be created (`openvsize`).
- **OPEN-V Count.** The number of volumes that need to be created of the specified size (`openvcount`).
- **Emulation Type.** The emulation type of the resulting volume. In the case of an XP128/1024, if the size exceeds 60 GB the LUSE volume of type OPEN-V*n is displayed.
- **TotalSpaceNeeded.** The total space needed in the parity group for the new volumes of the specified size to be created.

Syntax `list openv_util <pgname> -openvsize <size> -openvcount <num> -fs|-ts`

Arguments `<pgname>`

The name of the parity group (domainID-PGID-VDevID) in which the volumes of the specified size should be created.

`openvsize <size>`

The size in megabytes of the OPEN-V volumes to be created.

`openvcount <num>`

The number of OPEN-V volumes to be created.

`-fs`

The remaining free space in the VDEV will be considered for the `make volumes` operation. This option cannot be used with the `-ts` option.

`-ts`

The total capacity in the VDEV will be considered for the `make volumes` operation. This option cannot be used with the `-fs` option.

Example

LdevCount	OPEN-V Size (MB)	OPEN-V Count	EmulationType	TotalSpaceNeeded(MB)
40	92160	20	OPEN-V*2	2048000

If the size of the volumes to be created exceeds the available free space an appropriate error message will be displayed. The utility command notifies you if:

- The number of volumes to be created exceeds 512 for VDEV of RAID type 7D+1P or 256 for other supported RAID types.
- The size of the individual volume is less than 46.8MB or greater than 720GB (XP128/1024) or 2880GB (XP12000).

list parity_group

Description This command displays parity group configurations. Each parity group in the disk array is identified by its unique parity group name and has the following information associated with it:

- **Domain.** The domain number of the parity group. For parity group 2-1, the domain number is "2."
- **PG.** The PG number of the parity group. For Parity Group 2-1, the PG number is "1."
- **Raid Type.** The RAID type of the parity group (for example, RAID5 (3D+1P)).
- **Drive Type.** The drive type of the parity group (for example, DKR2B-J18FC).
- **VDev.** A VDEV is a subdivision of a parity group and depends on the RAID level of the parity group and hard disk capacity.
- **Emulation.** The emulation type of the parity group. The CLI displays only open volume emulations. The display shows OPEN-* if a VDEV contains LDEVs that are a mix of emulation types.
- **TotalFreeSpace.** The total free space (in MB) in the VDEV that can be used for creating new custom LDEVs.
- **IndividualFreeSpace.** The individual free spaces (in MB) in the VDEV that can be used for creating new custom LDEVs. For example, if TotalFreeSpace is 5000, this attribute may specify two blocks of free space, for example 3000 and 2000.
- **InitializeCount.** The number of LDEV IDs that need to be given for an initialize operation. To perform an initialize operation for a particular VDEV, you need to know how many new normal LDEVs to create. This value gives that number, which is the number of normal volumes deleted on that VDEV. For the OPEN-V emulation type, a hyphen (-) is displayed in this column.
- **Size.** The total capacity of the PG.

Syntax `list parity_group -fs -emulation -initializecount -domain <domain...> -pg <PG...> -vdev <vdev...> [-size]`

Arguments [-fs]

Displays domains, PGs, VDEVs, and individual free spaces.

[-initializecount]

Displays domains, PGs, VDEVs, and their respective initialize counts.

[-emulation]

Displays domains, PGs, VDEVs, and emulation types.

[-domain <domain...>]

The output is the same as the output of list parity_group except that it displays information only for specified domains.

[-pg <PG...>]

The output is the same as the output of list parity_group (default) except that it displays information only for the specified PGs.

[-vdev <vdev...>]

The output is the same as the output of list parity_group (default) except that it displays information only for the specified VDEVs.

[-size]

Displays the total capacity of the PG/VDEV.

Example `list parity_group` without any options displays all domains, parity groups, and VDEVs.

Domain	PG	VDev
1	1	1
1	1	2
1	2	1
1	3	1

The `-l` option output displays all domains, parity groups, and the information associated with each parity group.

Domain	PG	Vdev	EmulationType	RaidType	DriveType	TotalFreeSpace	IndividualFreeSpace	InitializeCount	TotalSize[MB]
1	1	1	OPEN-*	RAID5 (3D+1P)	DKR2B-J18FC	5000	3000	3	211312.375
1	1	1	OPEN-*	RAID5 (3D+1P)	DKR2B-J18FC	5000	2000	3	211312.375
1	1	2	OPEN-3	RAID5 (3D+1P)	DKR2B-J18FC	3000	3000	3	215002.75
1	2	1	OPEN-8	RAID1 (2D+2D)	DKR2B-J18FC	700	700	0	322221.75
1	3	1	OPEN-9	RAID5 (3D+1P)	DKR2B-J18FC	500	500	0	345675.89

[-fs]

Domain	PG	VDev	IndividualFreeSpace
1	1	1	3000
1	1	1	2000
1	1	2	3000
1	2	1	700
1	3	1	500

The `-l` option output is the same as for `list parity_group`.

[-initializecount]

Domain	PG	VDev	InitializeCount
1	1	1	3
1	1	2	3
1	2	1	0
1	3	1	0

The `-l` option output is the same as for `list parity_group -l`.

For the OPEN-V emulation type, a hyphen (-) is displayed in the InitializeCount column.

When `-initializecount` is used with the `-fs` option, this display includes domains, PGs, VDEVs, their respective initialize count, and the individual free space values.

Domain	PG	Vdev	InitializeCount	IndividualFreeSpaces
1	1	1	3	3000
1	1	1	3	2000
1	1	2	3	3000
1	2	1	0	700
1	3	1	0	500

[-emulation]

Domain	PG	VDev	EmulationType
1	1	1	OPEN-*
1	1	1	OPEN-*
1	1	2	OPEN-3
1	2	1	OPEN-8
1	3	1	OPEN-9

The `-l` option output is the same as for `list parity_group -l`.

[-domain <domain...>]

```
list parity_group -domain 1
```

Domain	PG	VDev
1	1	1
1	1	2
1	2	1
1	3	1

The `-l` option output is the same as for `list parity_group`. Only information for the specified domain is displayed.

The `-fs` option output is the same as for `list parity_group -fs`. Only information for the specified domain is displayed.

The `-initializecount` option output is the same as for `list parity_group -initializecount`. Only information for the specified domain is displayed.

[-pg <PG...>]

```
list parity_group -pg 1
```

Domain	PG	VDev
1	1	1
1	1	2

When `-pg` is used with the `-l`, `-fs`, `-initializecount`, or `-domain` options, the output is the same. Only information for the specified PG is displayed.

[-vdev <vdev...>]

```
list parity_group -vdev 1
```

Domain	PG	VDev
1	1	1
1	2	1
1	3	1

When `-vdev` is used with the `-l`, `-fs`, `-initializecount`, `-domain`, or `-pg` options, the output is the same. Only information for the specified VDEV is displayed.

[-size]

```
list parity_group -size
```

Domain	PG	VDev	TotalSize[MB]
1	1	1	211312.375
1	2	1	322221.75
1	3	1	345675.89

When `-size` is used with the `-fs` option, the output includes domains, PGs, VDEVs, their respective total capacity, and the individual free space values.

list usable_cus

Description This command lists the usable CUs present in the disk array. This is useful when creating custom LDEVs and initializing parity groups CLI commands.

`list usable_cus` has the following information associated with it:

- **CUID.** This specifies the CU number. For the XP128/XP1024, the CU numbers range from 0 to 31. For the XP12000, CU numbers range from 0 to 63. CU numbers are displayed in hexadecimal.

The `-l` and `-col` options cannot be used with this command.

Syntax `list usable_cus`

Example `list usable_cus` displays all the CU IDs that can be used for configuration in the disk array.

```
CUID
0
1
2
3
```

list vsc

Description The `list vsc` command displays the volume size configuration details for normal and custom volumes. Each LDEV is identified by the domain, parity group, VDEV, CU, and LDEV.

`list vsc` has the following information associated with it:

- **Domain.** The domain to which an LDEV's parity group belongs. The XP128 can have 1 or 2 domains, the XP1024 can have up to 8 domains, and the XP12000 can have up to 18 domains.
- **PG.** The parity group number to which an LDEV belongs. The XP128/XP1024 has between 1 and 32 parity groups per domain. The XP12000 has between 1 and 16 parity groups per domain.
- **Vdev.** A VDEV is a subdivision of a parity group and depends on the RAID level of the parity group and the hard disk capacity. The XP128/XP1024 can have 1 to 16 VDEVs per PG. The XP12000 can have 1 to 18 VDEVs per PG.
- **CU.** The CU to which the LDEV belongs. For the XP128/XP1024, the CU numbers range from 0 to 31. For the XP12000, CU numbers range from 0 to 63. CUs are displayed in hexadecimal format.
- **LDEV.** The LDEV number. Each CU can have LDEVs in the range from 0 to 255. LDEVs are displayed in hexadecimal format.
- **Emulation.** The emulation type of the LDEV. The CLI displays only open volume emulations. For LUSE volumes, the emulation type is displayed as OPEN-X * n, where n represents the total number of LDEVs that comprise the LUSE volume.
- **Capacity (MB).** The size of the LDEV in megabytes.
- **RAID.** The RAID level of the parity group to which an LDEV belongs. The supported RAID levels are RAID1, RAID5, and RAID6.
- **LDevType.** The kind of LDEV (custom or normal).

Syntax `list vsc [[-domain <domain...>] [-pg <PG...>] [-vdev <vdev...>] [-cv | -nv] [-deletable]] | [-unused]`

Arguments `[-domain <domain...>]`

The output displays all LDEVs defined in the disk array for the given domain numbers.

`[-pg <PG...>]`

The output is limited to the given parity group numbers.

`[-vdev <vdev...>]`

The output is limited to the given VDEV numbers.

`[-cv]`

The output is limited to the custom volumes present in the disk array.

`[-nv]`

The output is limited to the normal volumes present in the disk array.

`[-deletable]`

Displays all LDEVs that can be deleted using the `delete ldevs` command. The LDEV must not have a path, be a part of a LUSE volume, be a command device or be an Auto LUN reserved volume. The output is the same as the default output for the `list vsc` command.

`[-unused]`

Displays the LDEVs not present in the disk array. This information can be used to create new LDEVs. This command can be useful when used with the `create custom_ldevs` command, where you must supply CU:LDEV values for new LDEVs to be created. The default output displays all the LDEV numbers that are not present in the disk array.

Example `list vsc` without any options displays all the custom and normal defined in the disk array.

Domain	PG	Vdev	CU	LDEV	LDevType
1	1	1	00	00	Custom
1	1	1	00	0A	Custom
1	1	1	00	0B	Custom
1	1	1	00	0C	Normal

The `-l` option displays all the custom and normal volumes defined in the disk array along with the association configuration information.

Domain	PG	Vdev	CU	LDEV	Emulation	Capacit(MB)	RAID	LDevType
1	1	1	0	00	OPEN-E	2347	RAID1	Normal
1	1	1	0	01	OPEN-9*3	2347	RAID5	Custom
1	1	1	0	0A	OPEN-3*5	2347	RAID5	Custom
1	1	1	0	0B	OPEN-E	2347	RAID5	Normal

[-unused]

`list vsc -unused`

CU	LDev
0	f0
0	f1
0	f2
0	f3
0	f4
0	f5
0	f6
1	ff
2	f0
2	ff

make volumes

Description Use this command to create OPEN-V volumes of a specified size from the remaining free space in a VDEV, or to initialize a VDEV and specify the volumes to create. This command is supported only for the OPEN-V emulation type.

- The OPEN-V emulation type cannot be mixed with OPEN-3/8/9/E emulation types.
- For XP128/1024 arrays with an opensize less than 60 GB or for XP12000 arrays, the number of LDEV IDs to be passed is same as openvcount.
- For XP128/1024 arrays, if the volume to be created is larger than 60GB the DKC creates a LUSE volume of equally sized custom volumes. In this case, you must pass a valid number of LDEV IDs to the `make volumes` command. Use the `openv_util` command (page 93) to calculate the number of LDEV IDs to enter. Enter the LDev IDs according to the following rules:
 - The LDEVs in a LUSE volume must be in the same CU.
 - Enter the LDEVs in ascending order.
 - Use the `list vsc -unused` command to obtain the list the LDEV IDs to enter.
- Before running `make volumes` with the `-ts` option, verify that the custom LDEVs in the VDEV:
 - Do not have assigned paths
 - Are not part of a LUSE volume
 - Are not command devices
 - Are not part of an AutoLUN reserved volume

Syntax `make volumes <domain>, <pg>, <vdev>, <opensize>, <openvcount> , <cuID...>, <ldev,...> -fs | -ts`

Arguments `<domain>`

The domain for the new custom LDEV(s).

`<pg>`

The parity group number for the new custom LDEV(s).

`<vdev>`

The VDEV for the new custom LDEV(s).

`<opensize>`

Specifies the size of the new custom LDEV(s) in KB (assuming that adequate space exists). The size must be within the following range:

- 48,000KB - 754974720KB (XP 128/1024)
- 48,000KB - 3019898880KB (XP12000).

`<openvcount>`

Specifies the number of OPEN-V volumes to be created.

`<cuID...>`

Specifies the cuID for the new custom LDEV(s). The cuID is a case insensitive hexadecimal value.

`<ldevID...>`

Specifies the ldevID for the new custom LDEV(s). The ldevID is a case insensitive hexadecimal value.

Arguments `-fs`

Specifies that you want to create OPEN-V volumes from the remaining free space of the VDEV. This option cannot be used with the `-ts` option.

`-ts`

Specifies that you want to create OPEN-V volumes that use the entire capacity of the VDEV. This option cannot be used with the `-fs` option.

Example

- `make volumes 1, 1, 1, 52428800, 4, 00, 00:02-04 -fs`
This example creates four 50 GB volumes, (00:00), (00:02), (00:03), and (00:04), from the remaining 250GB of free space in VDEV 1-1-1.
- `make volumes 1, 1, 1, 94371840, 2, 00, F0:F1:F2:F3 -fs`
This example creates two custom volumes (00:F0,F1), (00:F2,F3) of 90GB (LUSE of size 2 of type OPEN-V*2) each in the available 250GB of free space on an XP128/1024.
Since the size of the OPEN-V volume is greater than 60GB, the `list openv_util` command can be used to calculate the number of LDEV IDs.
- `make volumes 1, 1, 1, 52428800, 4, 00, 00:02-04 -ts`
This example creates four custom 50GB volumes in VDEV 1-1-1 using the total capacity of the VDEV. If the total capacity is 250GB, this command creates the following custom LDEVs of size 52428800KB: (00:00),(00:02),(00:03),(00:04)
- `make volumes 1, 1, 1, 94371840, 2, 00, F0:F1:F2:F3 -ts`
This example creates two custom 90GB LDEVs (00:F0,F1 00:F2,F3) from the VDEV's total capacity (250GB). Since the size of the OPEN-V volumes is greater than 60GB, the `list openv_util` command can be used to calculate the number of LDEV IDs.

DKC, DKU, and TRAP commands

This section describes the following commands:

- [list acp_status](#) or [list dka_status](#), page 104
- [list chip_status](#) or [list cha_status](#), page 105
- [list chp_status](#), page 106
- [list cm_status](#), page 107
- [list csw_status](#), page 108
- [list dkc_status](#), page 109
- [list dkp_status](#), page 110
- [list dku_status](#), page 111
- [list drr_status](#), page 112
- [list pg_status](#), page 113
- [list sm_status](#), page 115
- [list traps](#), page 116

list acp_status or list dka_status

Description This command displays array control processor (ACP) and disk adapter (DKA) details. The terms ACP and DKA refer to the same component. You can also provide ACP/DKA names to view the status of specific ACPs/DKAs.

Syntax `list acp_status [-acp <acpname...> | -s <statustype...>]`

or

`list dka_status [-dka <dkaname...> | -s <statustype...>]`

Arguments `[-acp <acpname...>]` or `[-dka <dkaname...>]`

Displays the status of the specified ACPs/DKAs. *<acpname>* or *<dkaname>* can be one value, a set of values, or a range of values (for example, 1C or 1C:1D or 1C-1E).

`[-s <statustype...>]`

Displays only those ACPs/DKAs with the specified status type. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	DKA#	Name	Status
1	1	DKA-1B	Normal
1	2	DKA-1C	Service
1	3	DKA-1D	Acute
1	4	DKA-1E	Serious

-l option

The `-l` option lists a detailed error status for the ACPs/DKAs with errors.

Component	Status	REFCODE	Category	Error
DKA-1C	Moderate	3D9D10	DKA Processor Error	Injustice DC Voltage Control
DKA-1D	Moderate	3D9E20	DKA Processor Error	Injustice CE MODE

list chip_status or list cha_status

Description This command displays channel host interface processor (CHIP) and channel adapter (CHA) status details. The terms CHIP and CHA refer to the same component. You can also provide CHIP/CHA names to view the status of specific CHIPs/CHAs.

Syntax `list chip_status [-chip <chipname...> | -s <statustype...>]`

or

`list cha_status [-cha <chaname...> | -s <statustype...>]`

Arguments `[-chip <chipname...>]` or `[-cha <chaname...>]`

Displays the status of the specified <chipname> or <chaname>. It can be one value, a set of values, or a range of values (for example, 1P or 1P:1Q or 1P:1S).

`[-s <statustype...>]`

Displays only those CHIPs/CHAs with the specified status types. <statustype> can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	CHA#	Name	Status
1	1	CHA-1P	Normal
1	2	CHA-1Q	Service
1	3	CHA-1R	Acute
1	3	CHA-1S	Serious

-l option

The -l option displays detailed error status for the CHIP/CHA.

Component	Status	REFCODE	Category	Error
CHA-1P	Moderate	399D00	CHA Processor Error	Injustice DC Voltage Control
CHA-1Q	Moderate	399E10	CHA Processor Error	Injustice CE MODE
CHA-1R	Normal			
CHA-1S	Normal			

list chp_status

Description This command displays channel processor (CHP) details. You can also provide chip names to view the status of specific CHPs.

Syntax `list chp_status [-chp <chpname...> | -s <statustype...>]`

Arguments `[-chp <chpname...>]`

Displays the status of the specified CHPs. *<chpname>* can be one value, a set of values, or a range of values (for example, 001P or 001P:001Q or 001P-001S).

`[-s <statustype...>]`

Displays only those CHPs with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	CHA#	CHP#	Name	Status
1	1	1	CHP00-1P	Normal
1	2	2	CHP00-1Q	Service
1	3	3	CHP00-1R	Acute
1	4	4	CHP00-1S	Serious

-l Option

The `-l` option lists a detailed error status for the CHPs with errors.

```
Component Status REFCODE Category Error
CHP02-1P Service 307102 CHA Processor Error CHK1B threshold over
CHP11-1Q Serious 309011 CHA Processor Error LDEV blockade(Effect of Processor
blockade)
CHP00-1R Normal
```

list cm_status

Description This command displays cache memory (CM) details. You can also provide cache memory names to view the status of specific CMs.

Syntax `list cm_status [-cm <cmname...> | -s <statustype...>]`

Arguments `[-cm <cmname...>]`

Displays the status of the specified CMs. *<cmname>* can be one value or a set of values (for example, 1T or 1T:1U).

`[-s <statustype...>]`

Displays only those CMs with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	Cache#	Name	Status
1	0	Cache-1T	Normal

-l option

The `-l` option lists a detailed error status for the CMs with errors.

Component	Status	REFCODE	Category	Error
CACHE-1U	Moderate	FFF602	Cache Error	Injustice DC voltage control
CACHE-2F	Moderate	FFF703	Cache Error	Injustice CE MODE
CACHE-1T	Normal			

list csw_status

Description This command displays cache switch (CSW) details. You can also provide CSW names to view the status of specific CSWs.

Syntax `list csw_status [-csw <cswname...> | -s <statustype...>]`

Arguments `[-csw <cswname...>]`

Displays the status of the specified CSWs. *<cswname>* can be one value or a set of values (for example, 1N or 1A:1Q).

`[-s <statustype...>]`

Displays only those CSWs with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	CSW#	Name	Status
1	0	CSW-1N	Normal
1	0	CSW-1P	Service

-l option

The `-l` option lists a detailed error status for the CSWs with errors.

Component	Status	REFCODE	Category	Error
CSW-1N	Moderate	FF2002	CSW error	Injustice DC voltage control
CSW-1A	Moderate	FF2100	CSW error	Injustice CE MODE
CSW-1P	Normal			

list dkc_status

Description This command displays the disk controller (DKC) components and their overall status.

Syntax `list dkc_status`

Example

Component,	Status
Processor,	Normal
CSW,	Serious
Cache,	Moderate
Shared Memory,	Normal
Power Supply,	Normal
Battery,	Normal
Fan,	Normal
Environment,	Serious

list dkp_status

Description This command displays disk processor (DKP) details. You can also provide DKP names to view the status of specific DKPs.

Syntax `list dkp_status [-dkp <dkpname...> | -s <statustype...>]`

Arguments `[-dkp <dkpname...>]`

Displays the status of the specified DKPs. *<dkpname>* can be one value, a set of values, or a range of values (for example, 801C or 801C:801D or 801C-801E).

`[-s <statustype...>]`

Displays only those DKPs with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	DKA#	DKP#	Name	Status
1	1	1	DKP80-1B	Normal
1	2	2	DKP80-1C	Service
1	3	3	DKP80-1D	Acute
1	4	4	DKP80-1E	Serious

-l option

The `-l` option lists a detailed error status for the DKPs with errors.

Component	Status	REFCODE	Category	Error
DKP81-1B	Moderate	3D9B01	DKA Processor Error	SMA slave error
DKPA1-1D	Moderate	3D9C21	DKA Processor Error	MPA slave error
DKP80-1E	Normal			

list dku_status

Description This command displays the disk cabinet unit (DKU) component details and status.

Syntax `list dku_status`

Example Component, Status
Power Supply, Normal
Fan, Normal
Environment, Serious
Drive, Acute

list drr_status

Description This command displays disk recovery and regeneration (DRR) details. You can also provide DRR names to view the status of specific DRRs.

Syntax `list drr_status [-drr <drrname...> | -s <statustype...>]`

Arguments `[-drr <drrname...>]`

Displays the status of the specified DRRs. *<drrname>* can be one value, a set of values, or a range of values (for example, 801B or 801B:801C or 801D-801E).

`[-s <statustype...>]`

Displays only those DRRs with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example

Cluster#	DKA#	DRR#	Name	Status
1	1	1	DRR80-1B	Normal
1	2	2	DRR80-1C	Service
1	3	3	DRR80-1D	Acute
1	4	4	DRR80-1E	Serious

-l option

The `-l` option lists a detailed error status for the DRRs with errors.

Component	Status	REFCODE	Category	Error
DRR81-1B	Moderate	3D9B01	DKA Processor Error	SMA slave error
DRRA1-1D	Moderate	3D9C21	DKA Processor Error	MPA slave error
DRR80-1E	Normal			

list pg_status

Description This command displays parity group (PG) status details.

Syntax `list pg_status [-s <statustype...>] [-pg <pgname...> |
-domain <domain...> | -dku <dku...>]
[-disk | -ldev | -map]`

Arguments `[-s <statustype...>]`

Displays only parity groups with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

`[-pg <pgname...>]`

Displays only the specified parity groups (for example, 1-1 or 1-2 or 1-1:1-2).

`[-domain <domain...>]`

Displays only the parity groups in the specified domains (for example, 1 or 1:3).

`[-dku <dku...>]`

Displays only the parity groups in the specified DKUs (for example, R1 or R3 or R1:R3).

`[-disk]`

Displays physical disk status details.

`[-ldev]`

Displays logical device (LDEV) status details.

`[-map]`

Displays the parity group status details for connected parity groups.

Example

```
DKU# FB4# PG# Name Size(MB) Status
1 1 1 1-1 20 Normal
1 1 2 1-2 30 Service
```

[-map]

```
DKU FB4# PG# Name Size(MB) Status ConnectedPGs
R1 1 1 1-1 1295266 Normal 1-1;1-2
R1 1 3 1-3 545142 Normal
R1 1 4 1-4 684072 Service
```

[-disk]

```
DKU# PG Disk Status
1 1-1 R100 Normal
1 1-2 R200 Service
```

[-ldev]

```
DKU# PG Ldev Size(MB) Emulation Status
1 1-1 0:00 20 OPEN-3 Normal
1 1-2 0:20 30 OPEN-9 Service
```

[-l]

```
DKU# PG Component Status REFCODE Category Error
R1 1-1 R120 Service EF2200 Drive error (normal R/W) Drive blockade (Effect of
Dynamic sparing normal end)
R1 1-1 R130 Serious 43C300 Drive error (normal R/W) Drive blockade (media)
R1 1-2 * Normal
R1 1-3 * Normal
```

"*" indicates that all the components in that parity group are normal. If any of the components in a parity group have errors, then only those component names are specified.

Example 1

```
list pg_status -l
DKU FB4 PG Status REFCODE Category Error
R1 1 1 Service EF2200 Drive error (normal R/W) Drive blockade (Effect of
Dynamic sparing normal end)
R1 1 1 Serious 43C300 Drive error (normal R/W) Drive blockade (media)
```

Example 2

```
list pg_status -l -disk
DKU PG Disk Status REFCODE Category Error
R1 1-1 R120 Service EF2200 Drive error (normal R/W) Drive blockade (Effect of
Dynamic sparing normal end)
R1 1-1 R130 Serious 43C300 Drive error (normal R/W) Drive blockade (media)
```

Example 3

```
list pg_status -l -ldev
DKU PG Ldev Status REFCODE Category Error
R1 1-1 0:05 Service D32005 Pair volume status error HODM for this volume was
deleted (Operation from an SVP/remote console)
R1 1-1 0:9 Service D31009 Pair volume status error HODM completed the migration
copy for this volume
```

list sm_status

Description This command displays shared memory (SM) details. You can also provide shared memory names to view the status of specific SMs.

Syntax `list sm_status [-sm <smname...> | -s <statustype...>]`

Arguments `[-sm <smname...>]`

Displays the status of the specified SMs. *<smname>* can be one value or a range of values (for example, A or A:B).

`[-s <statustype...>]`

Displays only those SMs with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

Example `CSW#,Name,Status
0,Side-A,Normal`

-l option

The `-l` option lists a detailed error status for the SMs with errors.

```
Component Status REFCODE Category Error  
Side-B Service FFEC01 Shared Memory Error CHK3 threshold over  
Side-A Normal
```

list traps

Description This command displays all the events from the disk array that have resulted in an SNMP trap.

Syntax `list traps [-n <componentname...>] [-r <refcode...>]
[-s <statustype...>] [-c <category>]`

Arguments `[-n <componentname...>]`

Lists traps for the specified components. *<componentname>* can be one value or a set of values (for example, CHA-1P or CHA-1P:DRR80-1D).

`[-r <refcode...>]`

Lists traps with the specified reference codes. *<refcode>* can be one value or a set of values (for example, BF1211 or BF1211-FFF01C).

`[-s <statustype...>]`

Lists traps with the specified status types. *<statustype>* can be one value or a set of values (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

`[-c <category>]`

Lists traps in the specified category. *<category>* must be one value (for example, CHA Processor Error).

Example Component,STATUS,REFCODE,CATEGORY,ERROR,Date,Time
CHA-1P, Moderate,399D00,CHA Processor Error, Injustice DC Voltage
Control,10/03/2001,04:95
CHA-1Q, Moderate,399E10,CHA Processor Error, Injustice CE MODE, 10/03/2001,04:95
R120,Service EF2200,Drive error (normal R/W), Drive Blockade (Effect of Dynamic
sparing normal end), 10/03/2001,04:95
DRRA1-1D,Moderate,3D9C21,DKA Processor Error,MPA slave error, 10/03/2001,04:95
CHA-1Q,Moderate,399E10,CHA Processor Error, Injustice CE MODE, 10/03/2001,04:95

NOTE: For some traps, the component name, Status, or Category may not be available for display. In those cases, these fields are displayed as --.

4 CLI Commands for the XP48 and XP512

This chapter contains CLI commands for LUN and volume management specifically for the XP48 and XP512. This chapter also contains additional CLI commands to list information about DKC and DKU components, and SMNP traps.

LUN Management Commands

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add lun_to_lun_group

Description This command appends LUNs (or paths) to an existing LUN group. LUNs must have the same security defined.

Syntax `add lun_to_lun_group <portname>, <lun_group_nickname>, <lun_id...>`

Arguments `<portname>`

The port to which the LUNs are to be added. Port names are not case sensitive.

`<lun_group_nickname>`

The LUN group nickname of the LUN group to which the path is to be added.

`<lun_id...>`

The LUN ID of the path to be added to the LUN group. LUN IDs must be expressed in hexadecimal.

Example `add lun_to_lun_group CL1-A, nick1, 0f, 2f`

add security_to_lun

Description This command assigns security to a LUN and associates that LUN with one or more WWNs or WWN groups. Only the host WWN or WWN group associated with this LUN can access this LUN.

Syntax `add security_to_lun <portname>, <lun_id>, <wwn>, <wwn_group> [, <wwn2>, <wwn_group2>...]`

Arguments `<portname>`

The port from which the LUN has been created. Port names are not case sensitive.

`<lun_id>`

The LUN ID of the LUN to be associated. LUNs must be given in hexadecimal.

`<wwn>`

The WWN of the LUN to be associated.

`<wwn_group>`

The WWN group of the LUN to be associated.

Example `add security_to_lun CL1-A, 00, wwn1, wwnGrp1`

add security_to_lun_group

Description This command assigns security to a LUN group and associates that LUN group with one or more WWNs or WWN groups. Only the host WWN or WWN group associated with this LUN group can access this LUN group.

Syntax `add security_to_lun_group <portname>, <lun_group_nickname>, <wwn>, <wwn_group> [, <wwn2>, <wwn_group2>...]`

Arguments `<portname>`

The port from which the LUN group has been created. Port names are not case sensitive.

`<lun_group_nickname>`

The LUN group nickname of the LUN group to be associated.

`<wwn>`

The WWN of the LUN group.

`<wwn_group>`

The WWN group of the LUN group.

Example `add security_to_lun_group CL1-A, lunGrp1, wwn1, wwnGrp1`

add wwn

Description This command adds one or more WWNs to a port. Any number of WWNs can be given in the same command.

Syntax `add wwn <portname>, <wwn>, <wwn_nickname> [, <wwn2>, <wwn_nickname2>...]`

Arguments `<portname>`

The port to which the WWNs are to be added. Port names are not case sensitive.

`<wwn>`

The WWN to be added.

`<wwn_nickname>`

The WWN nickname to be used for a WWN.

Example `add wwn CL1-C, 0123456789abcdef, wwn0, aaaaaaaaaaaaaaaaaa, wwn1`

add wwn_to_wwn_group

Description This command adds WWNs to an existing WWN group. All the WWNs in a group must have the same security information.

Syntax `add wwn_to_wwn_group <portname>, <wwn_group_nickname>, <wwn...>`

Arguments `<portname>`

The port of the WWN group to which the WWNs are to be added. Port names are not case sensitive.

`<wwn_group_nickname>`

The WWN group nickname of the WWN group.

`<wwn...>`

The WWN to be added.

Example `add wwn_to_wwn_group CL1-C, wwnGrp1, wwn0, wwn1`

create lun

Description This command creates a LUN (or path). This command executes successfully if no path from the port to the LDEV and no other LUN is assigned for the port, SCSI ID, and LUN ID. This command allows for the addition of multiple paths in the array in one operation. Each port can have maximum of 256 paths.

A range can be given for either ports or LUN IDs and LDEVs, but not both. Specify range values within square brackets [].

Syntax `create lun <portname>, <scsi_id>, <lun_id>, <cu>, <ldev>`

Arguments `<portname>`

The port from which the path has to be created. Port names are not case sensitive.

`<scsi_id>`

The SCSI ID to assign to the path being created. SCSI IDs are represented in hexadecimal.

`<lun_id>`

The LUN ID to assign to the path being created. LUN IDs are represented in hexadecimal.

`<cu>`

The CUs to which paths have to be created. CUs must be specified in hexadecimal.

`<ldev>`

The LDEVs to which paths have to be created. LDEVs must be specified in hexadecimal.

Example

```
create lun CL1-A, 0f, 10, 0, 1
create lun [CL1-A-CL1-E], 0f, 23, 0, 2b
create lun CL1-A, 0f, [24-2f], 0, [2b-36]
```

create lun_group

Description This command creates a LUN group. If the LUN group already exists, the operation fails.

Syntax `create lun_group <portname>, <lun_group_nickname>, <lun_id...>`

Arguments `<portname>`

The port from which the LUN group has to be created. Port names are not case sensitive.

`<lun_group_nickname>`

The LUN group nickname to be created.

`<lun_id...>`

The LUN ID to assign to the group being created. LUN IDs must be expressed in hexadecimal.

Example `create lun_group CL1-A, Nick1, 0f, 2f`
`create lun_group CL1-A, Nick1, 0f, [a-f]`

create wwn_group

Description This command creates a WWN group with nickname and associates WWNs. All WWNs to be in the group must have same security information.

Syntax `create wwn_group <portname>, <wwn_group_nickname>, <wwn1>, <wwn2>, [
<wwn3>...]`

Arguments `<portname>`

The port to which the WWN group is to be created. Port names are not case sensitive.

`<wwn_group_nickname>`

The WWN group nickname to assign to the WWN group.

`<wwn1>, <wwn2>`

The WWNs to be added. There should be at least two WWNs.

Example `create wwn_group CL1-C,wwnGrp1,wwn0,wwn1`

delete lun

Description This command deletes a specified LUN (or path).

A range can be given for either ports or LUN IDs and LDEVs, but not both. Specify range values within square brackets: [].

Syntax `delete lun <portname>, <scsiID>, <lunID>, <cu>, <ldev>`

Arguments `<portname>`

The port of the path to be deleted. Port names are not case sensitive.

`<scsiID>`

The SCSI ID of the path to be deleted. SCSI IDs must be expressed in hexadecimal.

`<lunID>`

The LUN ID of the path to be deleted. LUN IDs must be expressed in hexadecimal.

`<cu>`

The CU number of the path to be deleted. CU numbers are specified in hexadecimal.

`<ldev>`

The LDEV number of the path to be deleted. LDEVs must be given in hexadecimal.

Example

```
delete lun CL1-A, 0f, 10, 0, 01
delete lun [CL1-A-CL1-E], 0f, 23, 0, 2b
delete lun CL1-A, 0f, [24-2f], 0, [2b-36]
```

delete lun_from_lun_group

Description This command deletes a LUN (or path) from a LUN group. If there is only one LUN in the LUN group, the LUN group is also deleted.

Syntax `delete lun_from_lun_group <portname>, <lun_group_nickname>, <lun_id...>`

Arguments `<portname>`

The port of the LUN group from which the path is to be deleted. Port names are not case sensitive.

`<lun_group_nickname>`

The LUN group nickname of the LUN group from which the path is to be deleted.

`<lun_id...>`

The LUN ID of the path to be deleted from the LUN group. LUNs must be given in hexadecimal.

Example `delete lun_from_lun_group CL1-A, Nick1, 0f, 2f`

delete lun_group

Description This command deletes a LUN group.

Syntax `delete lun_group <portname>, <lun_group_nickname>`

Arguments `<portname>`

The port of the path to be deleted. Port names are not case sensitive.

`<lun_group_nickname>`

The LUN group nickname that is to be deleted.

Example `delete lun_group CL1-A, nick1`

delete lun_security

Description This command deletes security information for a LUN (or path).

Syntax delete lun_security <portname>, <lun_id>

Arguments <portname>

The port of the path whose security information is to be deleted. Port names are not case sensitive.

<lun_id>

The LUN ID of the path whose security information is to be deleted. LUNs must be given in hexadecimal.

Example delete lun_security CL1-C, 0f

delete security_from_lun

Description This command disassociates a WWN/WWN group specified in the command from the LUN.

Syntax `delete security_from_lun <portname>, <lun_id>, <wwn/wwnGroup...>`

Arguments `<portname>`

The port of the path to be deleted. Port names are not case sensitive.

`<lun_id>`

The LUN ID of the LUN whose security is to be deleted. LUNs must be given in hexadecimal.

`<wwn/wwnGroup...>`

The WWN or WWN group nickname to be disassociated from the LUN

Example `delete security_from_lun CL1-C, 0f, wwn1`

delete security_from_lun_group

Description This command deletes security from a LUN group. You must specify at least one WWN or WWN group nickname.

Syntax `delete security_from_lun_group <portname>, <lun_group_name>,
<wwn/wwnGroup...>`

Arguments `<portname>`

The port of the LUN group whose security is to be deleted. Port names are not case sensitive.

`<lun_group_name>`

The LUN group whose security is to be deleted.

`<wwn/wwnGroup...>`

The WWN or WWN group nickname to be disassociated from the LUN group.

Example `delete security_from_lun_group CL1-C, lunGrp1, wwn1, wwng1`

delete wwn

Description This command deletes the WWN for a port.

Syntax `delete wwn <portname>, <wwn_nickname>`

Arguments `<portname>`

The port from which the WWN is to be deleted. Port names are not case sensitive.

`<wwn_nickname>`

The WWN nickname to be deleted.

Example `delete wwn CL1-C, wwn1`

delete wwn_from_wwn_group

Description This command deletes one or more specified WWNs from a particular WWN group. This command does not allow you to delete WWNs from a WWN group that have less than two WWNs in the group.

Syntax `delete wwn_from_wwn_group <portname>, <wwn_group_nickname>, <wwn...>`

Arguments `<portname>`

The port of the WWN group from which the WWN is to be deleted. Port names are not case sensitive.

`<wwn_group_nickname>`

The WWN group nickname of the WWN group.

`<wwn...>`

The WWN to be deleted.

Example `delete wwn_from_wwn_group CL1-A, wwnGrp1, wwn1, wwn2`

delete wwn_group

Description This command deletes a WWN group. You cannot delete the WWNs defined in the group with this command. To delete the WWNs, use the `remove wwn_group` command (see page 157).

Syntax `delete wwn_group <portname>, <wwnGrpNickname>`

Arguments `<portname>`

The port from which the WWN group is to be deleted. Port names are not case sensitive.

`<wwnGrpNickname>`

The WWN group nickname to be deleted.

Example `delete wwn_group CL1-C, wwnGrp1`

list cmd_device

Description This command lists the command devices on the disk array. If there are no command devices, no values are displayed.

Syntax `list cmd_device`

Output This command displays the following information:

- CU
- LDEV

list count_for_volume_initialize

Description This command lists the number of normal volumes deleted in the disk array that can be used for volume initialize operation.

Syntax `list count_for_volume_initialize [-pg <paritygroup>]`

Arguments `[-pg <paritygroup>]`

If the `-pg` option is provided, then the output shows only information for the specified parity group.

Output This command displays the following information:

- Parity group
- Count

list free_ldev

Description This command lists the free or unallocated LDEVs in the disk array. Free or unallocated LDEVs are LDEVs that do not have paths assigned to them yet.

Syntax `list free_ldev [-cu <cu>]`

Arguments `[-cu <cu>]`

If the `-cu` option is provided, then the output shows all paths relevant to that CU. CUs must be given in hexadecimal.

Output This command displays the following information:

- CU
- LDEV

list lun

Description This command displays path related configuration details. This command also lists paths belonging to a particular port.

Syntax `list lun [-port <portname>]`

Arguments `[-port <portname>]`

If the `-port` option is provided, then the output shows only paths for the specified port name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- SCSI ID
- LUN ID
- CU
- LDEV
- Capacity (MB)

LUN IDs, CUs, and LDEVs are provided in hexadecimal.

list lun_group

Description This command lists LUN group information for the disk array.

Syntax `list lun_group [-port <portname> [-group <groupname>]]`

Arguments `[-port <portname> [-group <groupname>]]`

If the `-port` option is provided, you can also use the `-group` option. The output shows only LUNs for the specified port and group name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- LUN group name
- LUNs

list lun_group_security

Description This command lists LUN group security information for the disk array.

Syntax `list lun_group_security [-port <portname> [-group <groupname>]]`

Arguments `[-port <portname> [-group <groupname>]]`

If the `-port` option is provided, you can also use the `-group` option. The output shows only the LUN security information for the specified port and group name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- LUN group name
- WWNs
- WWN group names

list lun_security

Description This command lists LUN security information for the disk array.

Syntax `list lun_security [-port <portname>]`

Arguments `[-port <portname>]`

If the `-port` option is provided, then the output shows only LUN security information for the specified port name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- LUN ID
- WWNs
- WWN groups

list pg_freespace_info

Description This command lists the free space available in the parity groups.

Syntax `list pg_freespace_info [-pg <paritygroup>]`

Arguments `[-pg <paritygroup>]`

If the `-pg` option is provided, then the output shows only information for the specified parity group.

Output This command displays the following information:

- Parity group
- Free space

list pg_volume_info

Description This command lists the CUs in the disk array per parity group.

Syntax `list pg_volume_info [-pg <paritygroup>]`

Arguments `[-pg <paritygroup>]`

If the `-pg` option is provided, then the output shows only information for the specified parity group.

Output This command displays the following information:

- Parity group
- CU
- Number of LDEVs
- Emulation
- Attribute

list port

Description This command lists all the ports of the disk array.

Syntax `list port`

Output By default, this command displays the following information:

- Port name
- Host mode
- Fibre address
- Fibre topology

Fibre topology values

1 = Fabric on and FC-AL

2 = Fabric off and FC-AL

3 = Fabric on and point-to-point

4 = Fabric off and point-to-point

5 = Not a Fibre Channel port

list security_switch

Description This command lists security switch information for the disk array.

Syntax `list security_switch [-port <portname>]`

Arguments `[-port <portname>]`

If the `-port` option is provided, then it lists the LUN security information for that port name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- Security switch

list wwn

Description This command lists WWN information for WWNs registered with disk array ports.

Syntax `list wwn [-port <portname>]`

Arguments `[-port <portname>]`

If the `-port` option is provided, then the output shows only WWNs for the specified port name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- WWN nickname
- WWN

list wwn_group

Description This command lists WWN group information for the disk array.

Syntax `list wwn_group [-port <portname> [-group <groupname>]]`

Arguments `[-port <portname> [-group <groupname>]]`

If the `-port` option is provided, you can also use the `-group` option. The output shows only WWNs for the specified port and group name. Port names are not case sensitive.

Output This command displays the following information:

- Port name
- WWN group name
- WWNs

modify cmd_device

Description Use this command to set an LDEV as a command device or to release an existing command device.

Syntax `modify cmd_device <cu>, <ldev>, SET|RELEASE`

Arguments `<cu>`

The CU of the LDEV to be set or released as a command device. The CU must be specified in hexadecimal.

`<ldev>`

The LDEV that is to be set or released as a command device. The LDEV must be specified in hexadecimal and is not case sensitive.

`SET|RELEASE`

If the flag is has the value SET, the LDEV is made a command device. If flag has the value RELEASE, the existing command device is released.

Example `modify cmd_device 0, 0f, SET`

modify fibre_address

Description This command modifies a port's Fibre Channel address.

Syntax `modify fibre_address <portname>, <fibre_address>`

Arguments `<portname>`

The port address to be modified. Port names are not case sensitive.

`<fibre_address>`

The address to be set. The fibre address is specified as a loop ID value.

Example `modify fibre_address CL1-A, 10`

modify fibre_topology

Description This command modifies a port's Fibre Channel topology.

Syntax `modify fibre_topology <portname>, <fibre_topology>`

Arguments `<portname>`

The port topology to be modified. Port names are not case sensitive.

`<fibre_topology>`

The topology to be set. The fibre topology range is specified between 1 and 4.

Example `modify fibre_topology CL1-A, 4`

modify host_mode

Description This command modifies a port's host mode.

Syntax `modify host_mode <portname>, <hostmode>`

Arguments *<portname>*

The port host mode to be modified. Port names are not case sensitive.

<hostmode>

The new host mode to be set. The following host mode values are supported:

- 00: Standard
- 03: Reserved
- 04: Sequent
- 05 - 07: Reserved
- 08: HP-UX
- 09: VxVM-DMP
- 0A: NetWare
- 0C: MS Cluster Server
- 0D - 0F: Reserved

modify lun_group_nickname

Description This command modifies a LUN group nickname.

Syntax `modify lun_group_nickname <portname>, <old_group_nickname>,
<new_group_nickname>`

Arguments `<portname>`

The port LUN group nickname to be modified. Port names are not case sensitive.

`<old_group_nickname>`

The LUN group nickname to be modified.

`<new_group_nickname>`

The new LUN group nickname to be set.

Example `modify lun_group_nickname CL1-A, Nick1, Nick2`

modify security_switch

Description This command modifies port security by setting the security to ON or OFF.

Syntax `modify security_switch <portname>, ON|OFF`

Arguments `<portname>`

The port security switch to be modified. Port names are not case sensitive.

ON | OFF

The switch value. The security switch can be ON or OFF.

Example `modify security_switch CL1-A, ON`

modify wwn

Description This command modifies the WWN for the port and WWN specified.

Syntax `modify wwn <portname>, <oldwwn>, <newWwn>`

Arguments `<portname>`

The port whose WWN is to be modified. Only one port can be specified. Port names are not case sensitive.

`<oldwwn>`

The WWN to be modified. Only one WWN can be specified.

`<newWwn>`

Used to specify the new WWN. This must be a 16-digit hexadecimal value and must be unique within the port.

Example `modify wwn CL1-C, 1234567890abcdef, baaaaaaaaaaaaaac`

modify wwn_group_nickname

Description This command modifies the WWN group nickname.

Syntax `modify wwn_group_nickname <portname>, <old_group_nickname>, <new_group_nickname>`

Arguments `<portname>`

The port whose WWN group nickname is to be modified. Port names are not case sensitive.

`<old_group_nickname>`

The WWN group nickname to be modified.

`<new_group_nickname>`

The new WWN group nickname to be set.

Example `modify wwn_group_nickname CL1-C, wwnGrp1, wwnGrp101`

modify wwn_nickname

Description This command modifies a WWN nickname.

Syntax `modify wwn_nickname <portname>, <old_nickname>, <new_nickname>`

Arguments `<portname>`

The port whose WWN nickname is to be modified. Port names are not case sensitive.

`<old_nickname>`

The WWN nickname to be modified.

`<new_nickname>`

The new WWN nickname to be set.

Example `modify wwn_nickname CL1-C, wwn1, wwn2`

remove wwn_group

Description This command deletes a WWN group and the WWNs defined in the group.

Syntax `remove wwn_group <portname>, <wwn_group_nickname>`

Arguments `<portname>`

The port from which the WWN group is to be deleted. Port names are not case sensitive.

`<wwn_group_nickname>`

The WWN group nickname to be deleted.

Example `remove wwn_group CL1-C, wwnggrp1`

Volume Management commands

This section describes the following commands:

- [create custom_volumes](#), page 159
- [delete vsc_volumes](#), page 160
- [expand lun](#), page 161
- [list ldev](#), page 162
- [list ldev_size_info](#), page 163
- [list luse](#), page 164
- [list parity_group](#), page 165
- [list unused_ldev_ids](#), page 166
- [list usable_cus](#), page 167
- [volume initialize](#), page 168

create custom_volumes

Description This command creates a custom volume.

Syntax `create custom_volumes <pg>, <cu>, <ldev>, <emulation>,
<ldev_size> [;<cu2>, <ldev2>, <emulation2>, <ldev_size2>...]`

Arguments `<pg>`

The parity group number for the new custom volume.

`<cu>`

The CUs for the new custom volume. CUs should be represented in hexadecimal.

`<ldev>`

The LDEV ID for the new custom volume. The LDEV ID should be expressed in hexadecimal.

`<emulation>`

The emulation type of the new custom volume.

`<ldev_size>`

The size of the new custom volume.

Example The following example creates a custom volume in parity group 1-1, with CU 0, LDEV 7, emulation type OPEN-3, and a size of 100 megabytes:

```
create custom_volumes 1-1, 0, 7, OPEN-3, 100
```

delete vsc_volumes

Description This command converts a custom or normal volume into free space. This command cannot convert the last normal volume to free space.

Syntax `delete vsc_volumes <pg>, <cu>, <ldev> [;<cu2>, <ldev2>...]`

Arguments `<pg>`

The parity group for which the deletion of LDEV is to be done.

`<cu>`

The CU ID of the LDEV to be deleted. CUs should be represented in hexadecimal.

`<ldev>`

The LDEV ID of the LDEV to be deleted. LDEV IDs should be represented in hexadecimal.

Example `delete vsc_volumes 1-1, 0, 0`

expand lun

Description This command creates an expanded LUN.

Syntax `expand lun <top_cu>, <top_ldev>, <device_ldevs...>
-lun <portname>, <scsi_id>, <lun_id>, <cu>, <ldev>
or
expand lun <top_cu>, <top_ldev> -limit <ldev_count>
-lun <portname>, <scsi_id>, <lun_id>, <cu>, <ldev>`

Arguments `<top_cu>`

The CU number of the first LDEV in the expanded volume. `<top_cu>` should be specified in hexadecimal.

`<top_ldev>`

The LDEV number of the first LDEV in the expanded volume. `<top_ldev>` should be specified in hexadecimal.

`<device_ldevs...>`

The list of LDEVs to be expanded. `<device_ldevs>` should be specified in hexadecimal and separated by commas. This option cannot be used with the `-limit` option.

`-limit <ldev_count>`

The number of LDEVs to create. This option cannot be used with `<device_ldevs>`.

`-lun <portname>, <scsi_id>, <lun_id>, <cu>, <ldev>`

The `-lun` option specifies the paths to the LUSE volume. `<portname>`, `<scsi_id>`, `<lun_id>`, `<cu>`, `<ldev>` specify the complete path. If specifying more than one port, enclose the port names in brackets (for example, [CL1-A-CL1-E]). Port names are not case sensitive. LUNs, CUs, and LDEVs must be given in hexadecimal.

Example The following example creates an expanded LUN with top CU:LDEV 0:20 and device CU:LDEV 0:30, 0:34 and 0:37. It creates a LUN from CL1-A to the expanded LUN 0:20.

```
expand lun 0, 20, 30,34,37 -lun CL1-A, 0f, 10, 0, 20
```

The following example creates an expanded LUN with top CU:LDEV 0:20 and three device CU:LDEVs. It creates a LUN from port CL1-A to the expanded LUN 0:20.

```
expand lun 0, 20, -limit 3 -lun CL1-A, 0f, 10, 0, 20
```

list ldev

Description This command lists all the LDEVs that are available in the array. This command also lists LDEV information belonging to a CU.

Syntax `list ldev [-cu <cu>]`

Arguments `[-cu <cu>]`

CU number. When used, the command lists only the LDEVs for the specified CU. CUs must be given in hexadecimal.

Output This command displays the following information:

- CU
- LDEV
- Number of Cylinders
- Emulation
- Expansion Status
- Allocation Status
- LDEV Size
- LDEV LBA
- Auto LUN Reserve
- RAID Level
- Slot Size
- FB4,PG

list ldev_size_info

Description This command lists the LDEVs based on the parity group and/or CU numbers.

Syntax `list ldev_size_info [-pg <paritygroup>] [-cu <cu>]`

Arguments `[-pg <paritygroup>]`

If the `-pg` option is provided, then the output shows only information for the specified parity group.

`[-cu <cu>]`

If the `-cu` option is provided, then the output shows only information for the specified CU. CUs must be given in hexadecimal.

Output This command displays the following information:

- Parity group
- CU
- LDEV
- Emulation type
- Attribute
- User size
- Total size

list luse

Description This command lists LUSE volumes on the disk array. This command also lists LUSE volumes belonging to a particular CU.

Syntax `list luse [-cu <cu>]`

Arguments `[-cu <cu>]`

CU number. When used, the command lists only the LUSE volumes for the specified CU. CUs must be given in hexadecimal.

Output This command displays the following information:

- Top CU
- Top LDEV
- Device LDEVs

list parity_group

Description This command lists all the parity groups of the disk array.

Syntax `list parity_group`

Example Parity Groups

```
1-1
1-2
1-3
1-4
1-5
1-6
1-7
2-1
2-2
2-3
2-4
2-5
2-6
```

list_unused_ldev_ids

Description This command lists unused LDEV IDs present in the disk array. This information is generally used for assigning LDEV IDs to the custom and normal volumes created when using the `create custom_volumes` and `volume initialize` commands. This is not the same as unallocated LDEVs. For that, refer to `list_free_ldev` on page 137.

Syntax `list_unused_ldev_ids [-cu <cu>]`

Arguments `[-cu <cu>]`

CU number. When used, the command lists only the unused LDEVs for the specified CU. CUs must be given in hexadecimal.

Output This command displays the following information:

- CU
- LDEV

list usable_cus

Description This command lists the usable CUs present in the disk array.

Syntax `list usable_cus`

Example `list usable_cus` displays all the CU IDs that can be used for configuration in the disk array.

```
CUID
0
1
2
3
```

volume initialize

Description This command converts the custom volumes to normal volumes in a parity group. Execute the `list count_for_volume_initialize` command before executing this command to learn the volume count in order to provide the number of LDEVs to be assigned to the normal volumes.

Syntax `volume initialize <pg>, <cu>, <ldev> [;<cu2>, <ldev2>...]`

Arguments `<pg>`

The parity group present in the disk array.

`<cu>, <ldev>`

The IDs of the new normal LDEVs to be created. For each CU value, specify which LDEV you want to use. CUs and LDEVs must be given in hexadecimal.

Example `volume initialize 1-1, 0, 9`

DKC, DKU, and TRAP commands

This section describes the following commands:

- [list acp_status](#) or [list dka_status](#), page 170
- [list chip_status](#) or [list cha_status](#), page 171
- [list chp_status](#), page 172
- [list cm_status](#), page 173
- [list csw_status](#), page 174
- [list dkc_status](#), page 175
- [list dkp_status](#), page 176
- [list dku_status](#), page 177
- [list drr_status](#), page 178
- [list pg_status](#), page 179
- [list sm_status](#), page 181
- [list traps](#), page 182

list acp_status or list dka_status

Description This command displays array control processor (ACP) and disk adapter (DKA) details. The terms ACP and DKA refer to the same component. You can also provide ACPs/DKAs names to view the status of specific ACPs/DKAs.

Syntax `list acp_status [<acpname...> | -s <statustype...>] [-x]`

or

`list dka_status [<dkaname...> | -s <statustype...>] [-x]`

Arguments `[<acpname...>]` or `[<dkaname...>]`

Displays the status of the specified ACPs/DKAs.

`[-s <statustype...>]`

Displays only those ACPs/DKAs with the specified status type (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the ACPs/DKAs with errors.

Example `Cluster# DKA# Name Status`

```
1 1 DKA-1B Normal
1 2 DKA-1C Service
1 3 DKA-1D Acute
1 4 DKA-1E Serious
```

[-x]

`Component Status REFCODE Category Error`

`DKA-1C Moderate 3D9D10 DKA Processor Error Injustice DC Voltage Control`

`DKA-1D Moderate 3D9E20 DKA Processor Error Injustice CE MODE`

list chip_status or list cha_status

Description This command displays channel host interface processor (CHIP) and channel adapter (CHA) status details. The terms CHIP and CHA refer to the same component. You can also provide chip names to view the status of specific CHIPs/CHAs.

Syntax `list chip_status [<chipname...> | -s <statustype...>] [-x]`

or

`list cha_status [<chaname...> | -s <statustype...>] [-x]`

Arguments `[<chipname...>]` or `[<chaname...>]`

Displays the status of the specified CHIPs/CHAs.

`[-s <statustype...>]`

Displays only those CHIPs/CHAs with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Displays detailed error status for the CHIPs/CHAs with errors.

Example `Cluster# CHA# Name Status`

```
1 1 CHA-1P Normal
1 2 CHA-1Q Service
1 3 CHA-1R Acute
1 3 CHA-1S Serious
```

[-x]

```
Component Status REFCODE Category Error
CHA-1P Moderate 399D00 CHA Processor Error Injustice DC Voltage Control
CHA-1Q Moderate 399E10 CHA Processor Error Injustice CE MODE
CHA-1R Normal
CHA-1S Normal
```

list chp_status

Description This command displays channel processor (CHP) details.

Syntax `list chp_status [<chpname...> | -s <statustype...>] [-x]`

Arguments `[<chpname...>]`

Displays the status of the specified CHPs.

`[-s <statustype...>]`

Displays only those CHPs with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the CHPs with errors.

Example `Cluster# CHA# CHP# Name Status`

```
1 1 1 CHP00-1P Normal
1 2 2 CHP00-1Q Service
1 3 3 CHP00-1R Acute
1 4 4 CHP00-1S Serious
```

[-x]

```
Component Status REFCODE Category Error
CHP02-1P Service 307102 CHA Processor Error CHK1B threshold over
CHP11-1Q Serious 309011 CHA Processor Error LDEV blockade(Effect of Processor
blockade)
CHP00-1R Normal
```

list cm_status

Description This command displays cache memory (CM) details. You can also provide cache memory names to view the status of specific CMs.

Syntax `list cm_status [<cmname...> | -s <statustype...>] [-x]`

Arguments `[<cmname...>]`

Displays the status of the specified CMs.

`[-s <statustype...>]`

Displays only those CMs with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the CMs with errors.

Example

Cluster#	Cache#	Name	Status
1	0	Cache-1T	Normal

[-x]

Component	Status	REFCODE	Category	Error
CACHE-1U	Moderate	FFF602	Cache Error	Injustice DC voltage control
CACHE-2F	Moderate	FFF703	Cache Error	Injustice CE MODE
CACHE-1T	Normal			

list csw_status

Description This command displays cache switch (CSW) details. You can also provide CSW names to view the status of specific CSWs.

Syntax `list csw_status [<cswname...> | -s <statustype...>] [-x]`

Arguments `[<cswname...>]`

Displays the status of the specified CSWs.

`[-s <statustype...>]`

Displays only those CSWs with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the CSWs with errors.

Example `Cluster# CSW# Name Status`

`1 0 CSW-1N Normal`

`1 0 CSW-1P Service`

[-x]

`Component Status REFCODE Category Error`

`CSW-1N Moderate FF2002 CSW error Injustice DC voltage control`

`CSW-1A Moderate FF2100 CSW error Injustice CE MODE CSW-1P Normal`

list dkc_status

Description This command displays the disk controller (DKC) components and their overall status.

Syntax `list dkc_status`

Example

Component,	Status
Processor,	Normal
CSW,	Serious
Cache,	Moderate
Shared Memory,	Normal
Power Supply,	Normal
Battery,	Normal
Fan,	Normal
Environment,	Serious

list dkp_status

Description This command displays disk processor (DKP) details. You can also provide DKP names to view the status of specific DKPs.

Syntax `list dkp_status [<dkpname...> | -s <statustype...>] [-x]`

Arguments `[<dkpname...>]`

Displays the status of the specified DKPs.

`[-s <statustype...>]`

Displays only those DKPs with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the DKPs with errors.

Example `Cluster# DKA# DKP# Name Status`

```
1 1 1 DKP80-1B Normal
1 2 2 DKP80-1C Service
1 3 3 DKP80-1D Acute
1 4 4 DKP80-1E Serious
```

[-x]

```
Component Status REFCODE Category Error
DKP81-1B Moderate 3D9B01 DKA Processor Error SMA slave error
DKPA1-1D Moderate 3D9C21 DKA Processor Error MPA slave error
DKP80-1E Normal
```


list dku_status

Description This command displays the disk cabinet unit (DKU) component details and status.

Syntax `list dku_status`

Example Component, Status
Power Supply, Normal
Fan, Normal
Environment, Serious
Drive, Acute

list drr_status

Description This command displays disk recovery and regeneration (DRR) details. You can also provide DRR names to view the status of specific DRRs.

Syntax `list drr_status [<drrname...> | -s <statustype...>] [-x]`

Arguments `[<drrname...>]`

Displays the status of the specified DRRs. `<drrname>` can be one value, a set of values, or a range of values.

`[-s <statustype...>]`

Displays only those DRRs with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the DRRs with errors.

Example `Cluster# DKA# DRR# Name Status`

```
1 1 1 DRR80-1B Normal
1 2 2 DRR80-1C Service
1 3 3 DRR80-1D Acute
1 4 4 DRR80-1E Serious
```

[-x]

```
Component Status REFCODE Category Error
DRR81-1B Moderate 3D9B01 DKA Processor Error SMA slave error
DRRA1-1D Moderate 3D9C21 DKA Processor Error MPA slave error
DRR80-1E Normal
```

list pg_status

Description This command displays parity group (PG) status details.

Syntax `list pg_status [-x] [-s <statustype...>] [-pg <pgname...> | -domain <domain...> | -dku <dku...>] [-disk | -ldev]`

Arguments `[-x]`

Lists a detailed error status for the parity groups with errors.

`[-s <statustype...>]`

Displays only parity groups with the specified status types (for example, acute or service). Values are normal, acute, service, moderate, and serious.

`[-pg <pgname...>]`

Displays only the specified parity groups (for example, 1-1 or 1-2).

`[-domain <domain...>]`

Displays only the parity groups in the specified domains (for example, 1 or 3).

`[-dku <dku...>]`

Displays only the parity groups in the specified DKUs (for example, R1 or R3).

`[-disk]`

Displays physical disk status details.

`[-ldev]`

Displays logical device (LDEV) status details.

Example

```
DKU# FB4# PG# Name Size(MB) Status
1 1 1 1-1 20 Normal
1 1 2 1-2 30 Service
```

[-x]

```
DKU# PG Component Status REFCODE Category Error
R1 1-1 R120 Service EF2200 Drive error (normal R/W) Drive blockade (Effect
of Dynamic sparing normal end)
R1 1-1 R130 Serious 43C300 Drive error (normal R/W) Drive blockade (media)
R1 1-2 * Normal
R1 1-3 * Normal
```

“*” indicates that all the components in that parity group are normal. If any of the components in a parity group have errors, then only those component names are specified.

[-disk]

```
DKU# PG Disk Status
1 1-1 R100 Normal
1 1-2 R200 Service
```

[-ldev]

```
DKU# PG Ldev Size(MB) Emulation Status
1 1-1 0:00 20 OPEN-3 Normal
1 1-2 0:20 30 OPEN-9 Service
```

Example Example 1

```
list pg_status -x
```

```
DKU FB4 PG Status REFCODE Category Error
```

```
R1 1 1 Service EF2200 Drive error (normal R/W) Drive blockade (Effect of  
Dynamic sparing normal end)
```

```
R1 1 1 Serious 43C300 Drive error (normal R/W) Drive blockade (media)
```

Example 2

```
list pg_status -x -disk
```

```
DKU PG Disk Status REFCODE Category Error
```

```
R1 1-1 R120 Service EF2200 Drive error (normal R/W) Drive blockade (Effect  
of Dynamic sparing normal end)
```

```
R1 1-1 R130 Serious 43C300 Drive error (normal R/W) Drive blockade (media)
```

Example 3

```
list pg_status -x -ldev
```

```
DKU PG Ldev Status REFCODE Category Error
```

```
R1 1-1 0:05 Service D32005 Pair volume status error HODM for this volume was  
deleted (Operation from an SVP/remote console)
```

```
R1 1-1 0:9 Service D31009 Pair volume status error HODM completed the  
migration copy for this volume
```

list sm_status

Description This command displays shared memory (SM) details. You can also provide shared memory names to view the status of specific SMs.

Syntax `list sm_status [<smname...> | -s <statustype...>] [-x]`

Arguments `[<smname...>]`

Displays the status of the specified SMs.

`[-s <statustype...>]`

Displays only those SMs with the specified status types. Values are normal, acute, service, moderate, and serious.

`[-x]`

Lists a detailed error status for the SMs with errors.

Example `CSW#,Name,Status`
`0,Side-A,Normal`

[-x]

```
Component Status REFCODE Category Error
Side-B Service FFEC01 Shared Memory Error CHK3 threshold over
Side-A Normal
```

list traps

Description This command displays all the events from the disk array that have resulted in an SNMP trap.

Syntax `list traps [-n <componentname...>] [-r <refcode...>]
[-s <statustype...>] [-c <category>]`

Arguments `[-n <componentname...>]`

Lists traps for the specified components.

`[-r <refcode...>]`

Lists traps with the specified reference code.

`[-s <statustype...>]`

Lists traps with the specified status types (for example, acute or acute:service). Values are normal, acute, service, moderate, and serious.

`[-c <category>]`

Lists traps in the specified category. *<category>* must be one value (for example, CHA Processor Error).

Example Component,STATUS,REFCODE,CATEGORY,ERROR
CHA-1P, Moderate,399D00,CHA Processor Error, Injustice DC Voltage Control
CHA-1Q, Moderate,399E10,CHA Processor Error, Injustice CE MODE
R120,Service EF2200,Drive error (normal R/W), Drive Blockade (Effect of Dynamic
sparing normal end)
DRRA1-1D,Moderate,3D9C21,DKA Processor Error,MPA slave error
CHA-1Q,Moderate,399E10,CHA Processor Error, Injustice CE MODE

NOTE: For some traps, the component name, Status, or Category may not be available for display. In those cases, these fields are displayed as --.

5 Batch processing

Use the Command View CLI to run one or more CLI commands contained in a text file called a batch file. Batch processing features include:

- Ability to invoke the CLI, execute commands in a batch file, and then terminate.
- Ability to execute a batch file during an interactive CLI session by using the `execute` command.
- Ability to direct output from batch operations to a file.
- Faster execution by processing related configuration change commands simultaneously.

Batch file setup

Use a word processor or text editor to set up the batch file. Insert one or more CLI commands into the file using normal command syntax.

You can insert comments by starting the comment line with the `"#"` character. Use the `"/"` character to continue a command to another line.

A simple batch file example is shown below:

```
# This is a comment line
connect 10043
list lun
list ldev
list wwn
# Next command is create lun
# Syntax is create lun Port_name,
# SCSID, LUN, CU, Ldev
create lun CL1-A, 2, 3, 0, 4
create lun CL1-B, 3, 4, 1, /
5
```

Commands in a batch file are not executed in the order they are listed in the file. Instead, similar commands are grouped together and executed together to increase speed and efficiency. See ["Multiple set operations"](#) on page 190.

CLI output and error messages (data and syntax validation, execution errors) are sent to `stdout`, typically your screen. If the CLI client program fails, the resulting error output will go the `stderr` file, typically the screen.

 **NOTE:** Only CLI commands can be used in a batch file. Other shell commands or DOS commands are not allowed.

Batch processing with the `-f` option

Use the `-f` option to declare which batch file the CLI should run. This option starts the CLI and it processes the commands in the file you specify. For example:

```
cvcli -f listlun.txt
```

One `connect` command is mandatory in the file to specify which different operations are to be carried out. You can manage only one disk array in each script or file. Also, you cannot include commands that execute an operation on the same resource. For example, you cannot create and delete the same LUN in a single file.

Use only one batch file at a time. The filename can contain a relative or absolute path. A relative path will be relative to the directory where the CLI was started.

The CLI will automatically disconnect from any disk array before terminating.

For more information about batch processing with the `-f` option, see the following instructions and script files. These files are located in the `cvcli.tar` file, which is the CLI client file available on the Command View **Support** tab.

- `CVCLIScripting.txt`: Instructions on running scripts using the `-f` option method.
- `configscript.txt`: A script file for only listing the disk array configurations for an XP128/XP1024.
- `configscriptlegacy.txt`: A script file for only listing the disk array configurations for an XP48/XP512.
- `configModifyScript128_1024_12000.txt`: A script file for making disk array configuration changes to an XP128/XP1024/XP12000.
- `configModifyScript512_48.txt`: A script file for making disk array configuration changes to an XP48XP512.

Restrictions of the `-f` option

The following commands cannot be used in a batch file executed with the `-f` option:

- `disconnect`
- `execute`
- `exit`
- `help`
- `kill session`
- `manage`
- `unmanage`

Except when calling certain device and session administration commands, the first command in the file should be a `connect` command. You can issue a `connect` command for a disk array only once in the batch file.

Batch processing using the `execute` command

Use the `execute` command to run batch files during an interactive CLI session. Commands are processed the same as in the `cvcli -f` case, but there are some restrictions. Before running the `execute` command, you should always connect to a disk array first by issuing the `connect` command. Here's an example of using the `execute` command:

```
cvcli 10044(R)>execute listlun.txt
```

Use this method to specify the file that contains the CLI commands. This is an easy way to use generic batch files for different disk arrays. Processing of commands for multiple disk arrays is not supported.

You can specify only one filename at a time. The filename can contain a relative or absolute path. A relative path will be relative to the directory where the CLI was started.

Restrictions of the `execute` command

The following commands cannot be used as part of the input file with the `execute` command:

- `connect`
- `disconnect`
- `execute`
- `exit`
- `help`
- `kill session`
- `list session`
- `manage`
- `unmanage`

When using the `execute` command, you cannot use the `connect` command in the file. It is mandatory to issue the `connect` command before you issue the `execute` command. Also, you cannot use the `disconnect` command in the batch file. You must issue it after processing the `execute` command. Note that other commands are optional. A typical session sequence will be as follows:

```
connect 10044
other commands...
cvcli 10044(R)>execute listlun.txt
other commands...
cvcli 10044(R/W)>disconnect
```

Redirecting output with the -o option

Use the `-o` option to redirect output to a file.

XP48 and XP512

If the file contains any command with `-o`, then an error is flagged because the `-o` option is not supported for commands within the batch file.

Example 1

This first command in the following batch file will fail to execute correctly.

`list.txt` contains:

```
list port -o port.out
list wwn
```

The command entered is:

```
CV_CLI 30055 (R)> execute list.txt
```

The results are:

```
<Item:1 LineNumber:1>-o option cannot be used inside a command file.
Please use the -o option within the execute command or the -f command.
```

Example 2

This command and batch file will execute correctly.

`list.txt` contains:

```
list port
```

The command entered is:

```
CV_CLI 30055 (R)> execute list.txt -o list.out
```

The results are:

```
Sending request to the CV server ...
Please find results in the file:list.out
```

XP128/XP1024/XP12000

The `-o` option is supported for these disk arrays in both the batch file and the command line.

Specifying the `-o` option with a command in the file will send the command output to the file specified in the command. If the `-o` option is not specified for a command, the output is sent to the file specified "outside" the file, at the `cvcli` execution with `-o` or the `execute` command execution with `-o`.

Example 1

This command and batch file will execute correctly.

`list.txt` contains:

```
list port -o port.out
list ldev -o ldev.out
```

The command entered is:

```
CV_CLI 10039 (R/W)> execute list.txt -o all.out
```

The results are:

```
Sending request to the CV server ...
10039: The server has latest data.
Sending output to file: all.out
```

all.out contains:

```
Executing line#1...
list port -o port.out
Sending output to file : port.out
Executing line#2...
list ldev -o ldev.out
Sending output to file : ldev.out
```

port.out contains:

```
Executing line#1...
list port -o port.out
PortName
CL1-A
CL1-B
CL1-C
CL1-D
CL1-E
CL1-F
```

Example 2

This command and batch file will execute correctly.

list.txt contains:

```
list port -o port.out
list ldev -o ldev.out
```

The command entered is:

```
CV_CLI 10039 (R/W)> execute list.txt
```

The results are:

```
Sending request to the CV server ...
10039: The server has latest data.
Executing line#1...
list port -o port.out
Sending output to file : port.out
Executing line#2...
```

Redirecting output to be used as input

A number of `list` commands for the XP128/XP1024/XP12000 can generate output that is useful as input to other commands. Use the `-cmd` and `-category` options, as described below, to create special output files.

The output files contains `create` or `delete` commands based on the results of the `list` commands. They are formatted, and ready for execution, using the `-f` option or `execute` command.

Sample syntax

```
list lun -cmd <command_type> -category <category> [-col <column_name...>]
-csv -o <output_file>
```

`-cmd <command_type>`

Must be one of the following:

- create
- delete

`-category <category>`

Must be one of the following:

- lun
- host_group
- luse

`[-col <column_name...>]`

Use selective column names if the output file contains more fields than needed for the `create` or `delete` commands that are generated.

`-csv`

The `-csv` option must be used to produce comma-separated output.

`-o <output_file>`

The file where the output is to be written. This can be a filename only or a path and filename.

The above functionality is targeted only for CLI output generated with the `-cmd` and `-category` options, prior CLI output should be edited by the user manually to feed it as input.

Example 1

Enter: `list lun -cmd create -category lun -csv -o createluns.txt`

```
CV_CLI 20036 (R/W)> list lun -cmd create -category lun -csv
Sending Request to CV server...
20036 : The server has latest data.
create lun 1A,1A-G00,1,0,6
create lun 1A,1A-G00,2,0,7
create lun 1A,1A-G00,30,0,11
create lun 1A,1B-G00,8,0,52
create lun 1A,1B-G00,9,0,53
create lun 1B,1B-G00,4,0,14
create lun 1B,1B-G00,b,0,1b
create lun 1B,1B-G00,c,0,1c
create lun 1C,1C-G00,2,0,12
create lun 1C,1C-G00,3,0,13
create lun 1C,1C-G00,4,0,14
create lun 1C,1C-G00,5,0,15
create lun 1C,1C-G00,6,0,16
```

Example 2

Enter: `list lun -cmd delete -category lun -csv -o deletelun.txt`

```
CV_CLI 20036 (R)> list lun -cmd delete -category lun -csv
Sending Request to CV server ...
20036 : The server has latest data.
delete lun 1A,1A-G00,1,0,6
delete lun 1A,1A-G00,2,0,7
delete lun 1A,1B-G00,9,0,53
delete lun 1A,1B-G00,a,0,54
delete lun 1B,1B-G00,3,0,13
delete lun 1B,1B-G00,10,0,20
delete lun 1B,1B-G00,21,2,1
delete lun 1C,1C-G00,0,0,10
delete lun 1C,1C-G00,2,0,12
delete lun 1C,1C-G00,3,0,13
delete lun 1C,1C-G00,4,0,14
```

Example 3

```
Enter: list lun -cmd create -category host_group -col
PortName:HostGroupNickname -csv -o createhost_grp.txt

CV_CLI 20036 (R)> list lun -cmd create -category host_group -col
PortName:HostGroupNickname -csv
Sending Request to CV server ...
20036 : The server has latest data.
create host_group 1A,1A-G00
create host_group 1A,1A-G00
create host_group 1A,1B-G00
create host_group 1A,1B-G00
create host_group 1B,1B-G00
create host_group 1B,1B-G00
create host_group 1B,1B-G00
create host_group 1C,1C-G00
create host_group 1C,1C-G00
create host_group 1C,1C-G00
```

Example 4

```
Enter: list lun -cmd delete -category host_group -col
PortName:HostGroupNickname -csv -o deletehost_group.txt

CV_CLI 20036 (R)> list lun -cmd delete -category host_group -col
PortName:HostGroupNickname -csv
Sending Request to CV server ...
20036 : The server has latest data.
delete host_group 1A,1A-G00
delete host_group 1A,1A-G00
delete host_group 1A,1A-G00
delete host_group 1B,1B-G00
delete host_group 1B,1B-G00
delete host_group 1B,1B-G00
delete host_group 1B,1B-G00
delete host_group 1B,1B-G00
delete host_group 1C,1C-G00
delete host_group 1C,1C-G00
delete host_group 1C,1C-G00
```

Example 5

```
Enter: list luse -cmd delete -category luse -csv -col CU:LDEV -o createluse.txt

CV_CLI 20036 (R)> list luse -cmd delete -category luse -csv -col CU:LDEV
Sending Request to CV server...
20036 : The server has latest data.
delete luse 0,4a
delete luse 0,66
delete luse 0,74
delete luse 0,7d
delete luse 0,80
delete luse 0,84
delete luse 0,86
delete luse 0,88
delete luse 0,8b
```

Example 6

Enter: `list wwn -cmd create -category wwn -csv -l -o creatwwn.txt`

or

Enter: `list wwn -cmd create -category wwn -csv -col`

PortName:HostGroupNickname:WWN

For creating WWNs without a nickname:

```
CV_CLI 20036 (R)> list wwn -cmd create -category wwn -csv -l
Sending Request to CV server ...
20036 : The server has latest data.
create wwn 1A,1A-G00,123456789ABCDEF~A333
create wwn 1A,1A-G00,123456789ABCDDDD~A2
create wwn 1A,1A-G00,12341654AB4DC809
create wwn 1A,nick1,1234567891234567~wwntest1
create wwn 1A,nick1,111111111111111~test
create wwn 1A,nick1,1234123412341234~wwntest
create wwn 1A,nick1,AAAAAAAAAAAA23423~wwn1
create wwn 1A,nick1,FFFFFFFFFFFF23423~wwn2
create wwn 1A,nick1,1234567891234568~wwntest2
create wwn 1A,newgrp,FFFFFFFFFFFFFFFF~DEC16
create wwn 2A,2A-G00,123456789ABCDEFF~wwn1
create wwn 2A,2A-G00,123456789ABCDEFA~wwn2
create wwn 2A,2A-G00,ABCDABCDABCDABCD~wwn3
create wwn 2A,2A-G00,1234123412341234~wwn4
create wwn 2B,nick1,ABCDEFF123456789~wwnnick1
create wwn 2B,nick2,ABCDEF123456788~test2
create wwn 2B,nick2,ABCDEFF123456787~test1
create wwn 2C,nick1,ABCDEFF123456789~wwnnick1
create wwn 2C,nick1,123456789ABCDEEE~wwnnick2
create wwn 2C,nick1,123456789ABCDFFF~wwnnick3
create wwn 2C,nick2,ABCDEF123456788~test2
create wwn 2C,nick2,ABCDEFF123456787~test1
```

Example 7

Enter: `list wwn -cmd delete -category wwn -csv -col`

PortName:HostGroupNickname:WWN

```
CV_CLI 20036 (R)> list wwn -cmd delete -category wwn -csv -col
PortName:HostGroupNickname:WWN
Sending Request to CV server ...
20036 : The server has latest data.
delete wwn 1A,1A-G00,123456789ABCDEF~A333
delete wwn 1A,1A-G00,123456789ABCDDDD~A2
delete wwn 1A,1A-G00,12341654AB4DC809
delete wwn 1A,nick1,1234567891234567
delete wwn 1A,nick1,111111111111111
delete wwn 1A,nick1,1234123412341234
delete wwn 1A,nick1,AAAAAAAAAAAA23423
delete wwn 1A,nick1,FFFFFFFFFFFF23423
delete wwn 1A,nick1,1234567891234568
delete wwn 1A,newgrp,FFFFFFFFFFFFFFFF
delete wwn 2A,2A-G00,123456789ABCDEFF~wwn1
delete wwn 2A,2A-G00,123456789ABCDEFA~wwn2
delete wwn 2A,2A-G00,ABCDABCDABCDABCD~wwn3
delete wwn 2A,2A-G00,1234123412341234~wwn4
delete wwn 2B,nick1,ABCDEFF123456789~wwnnick1
delete wwn 2B,nick2,ABCDEF123456788~test2
delete wwn 2B,nick2,ABCDEFF123456787~test1
delete wwn 2C,nick1,ABCDEFF123456789~wwnnick1
delete wwn 2C,nick1,123456789ABCDEEE~wwnnick2
delete wwn 2C,nick1,123456789ABCDFFF~wwnnick3
delete wwn 2C,nick2,ABCDEF123456788~test2
delete wwn 2C,nick2,ABCDEFF123456787~test1
```

Commands not supported

- modify commands
- create luse
- create custom_ldevs
- initialize vdev
- delete ldevs

Multiple set operations

Consecutive related commands in a batch file are grouped together and sent to the Command View server for execution simultaneously. The following groups are the ones under which the commands are grouped.

- **LIST:** Contains all the list commands.
- **LUN MANAGEMENT:** Contains create lun, create luse, modify host_mode, modify cmd_device, modify fibre_topology, modify fibre_address, delete lun, and delete luse commands.
- **LUN SECURITY:** Contains create wwn, create host_group, modify host_group, modify lun_security, modify wwn, delete host_group, and delete wwn commands.
- **CREATE CUSTOM LDEV:** Contains only create custom_ldev commands.
- **DELETE LDEV:** Contains only delete ldev commands.
- **INITIALIZE:** Contains only volume initialize commands.
- **INSTALL LICENSE KEY:** Contains only install license_key commands.
- **UNINSTALL LICENSE KEY:** Contains only uninstall license_key commands.
- **ADD IP SECURITY:** Contains only add ipsecurity commands.
- **DELETE IP SECURITY:** Contains only delete ipsecurity commands.

When the execution of any group fails, the CLI stops further execution of the file.

All list commands are executed, even when there is no data available for a list command.

Sequence of operations

The entire input file is first parsed for syntax errors. If a syntax error is found, all the errors are displayed with their respective line number. The commands in the file are not executed.

After a successful syntax validation, the consecutive commands in the file are grouped according to the groups above. Each group is sent to the Command View management station for execution. The execution of each group has to complete before the next group is executed.

If the execution of any group fails, the execute command is stopped and there is no further execution. The output and error messages for each command can be sent to a file using the -o option. If you don't specify the -o option, the output is displayed on the screen.

Scenario 1

A file containing syntax errors:

```
line#1: list port -port 1A
line#2: list ldev -port 1A
line#3: list prt -port 1A
```

Output

```
line 2: Invalid command syntax
line 3: Invalid command
```


Scenario 2

A file containing valid commands with invalid data:

```
line#1: #list commands
line#2: list port -port 1A
line#3: list ldev -cu 0 -o ldev.out
line#4:
line#5: #modify commands for lun management
line#6: create luse 0,0 - continuous 2
line#7: modify fibre_address 1A,2
line#8:
line#9: #modify command for lun security
line#10: delete wwn 1A,nick1,wwnnick2
line#11:
line#12: #some more list commands
line#13: list luse
line#14: list wwn -o wwn.out
```

Output

The output shows the line number where the error occurred and does not execute any of the commands.

 **NOTE:** For the XP48 and XP512, CLI error output does not specify the line numbers containing the errors.

Commands not supported in the same batch file

The following combinations of commands are not supported in the same batch file due to Mib restrictions. An error will occur if you try to run the following commands in the same file.

Example 1

Creating a LUN group and adding LUNs to it:

```
create lun_group CL1-A, lungrp1, 00
add lun_to_lun_group CL1-A, lungrp1, 04
```

Example 2

Adding LUNs to a LUN group (for the same port and LUN group) as individual commands:

```
add lun_to_lun_group CL1-A, lungrp1, 02
add lun_to_lun_group CL1-A, lungrp1, 10
add lun_to_lun_group CL1-A, lungrp1, 2A
```

This can be achieved by using the following range command in a batch file:

```
add lun_to_lun_group CL1-A, lungrp1, 02, 10, 2A
```

Example 3

Adding security to a LUN group (for the same port and LUN group) as individual commands:

```
add security_to_lun_group CL1-A, CMD, ci32td0
add security_to_lun_group CL1-A, CMD, ci32td1
```

This can be achieved using the following range command in a batch file:

```
add security_to_lun_group CL1-A, CMD, ci32td0, ci32td1
```

Example 4

Adding and deleting security to or from a LUN (for the same port and LUN) as individual commands:

```
add security_to_lun CL1-B, 03, man1
add security_to_lun CL1-B, 03, win3k
```

This can be achieved by using the following range command in a batch file:

```
add security_to_lun CL1-B, 03, man1, win3k
```

Deleting security to or from a LUN (for the same port and LUN) as individual commands:

```
delete security_from_lun CL1-B, 03, man1
delete security_from_lun CL1-B, 03, win3k
```

The above can be achieved using the following range command in a batch file:

```
delete security_from_lun CL1-B, 03, man1, win3k
```

Example 5


Adding a WWN and associating that WWN to a LUN or LUN_group (add security_to_lun or add security_to_lun_group):

```
add wwn CL1-B, 6271abcdef273489, win3k
add security_to_lun_group CL1-B, security, win3k
add security_to_lun CL1-B, 02, win3k
```

Example 6

The combination of modify host mode, modify fibre topology and modify fibre address commands when operated on same port causes an error for the XP512 array.

```
modify host_mode CL1-B,0
modify fibre_topology CL1-B,1
modify fibre_address CL1-B,6
```

 **NOTE:** This combination of commands works on XP128/XP1024 arrays.

Example 7

Creating a WWN group and adding WWNs to it:

```
create wwn_group CL1-D,wwngrp1,trial,try1
add wwn_to_wwn_group CL1-D,wwngrp1,0sanjay
```

Example 8

Adding WWNs to a WWN group (for the same port and WWN group) as individual commands:

```
add wwn_to_wwn_group CL1-D,wwngrp1,0sanjay
add wwn_to_wwn_group CL1-D,wwngrp1,testwwn
```

This can be achieved by using the following range command in a batch file:

```
add wwn_to_wwn_group CL1-D,wwngrp1,0sanjay,testwwn
```

Example 9

Deleting WWNs from a WWN group (for the same port and WWN group) as individual commands:

```
delete wwn_from_wwn_group CL1-D,wwngrp1,0sanjay
delete wwn_from_wwn_group CL1-D,wwngrp1,testwwn
```

This can be achieved by using the following range command in a batch file:

```
delete wwn_from_wwn_group CL1-D,wwngrp1,0sanjay,testwwn
```

Example 10

Deleting LUNs from a LUN group (for the same port and LUN group) as individual commands:

```
delete lun_from_lun_group CL1-H,Test,00
delete lun_from_lun_group CL1-H,Test,02
```

This can be achieved by using the following range command in a batch file:

```
delete lun_from_lun_group CL1-H,Test,00,02
```

Example 11

Adding and deleting luns to or from a LUN group and modifying the LUN group nickname (for the same port and LUN group):

```
add lun_to_lun_group CL1-H,Test,00,02
modify lun_group_nickname CL1-H,Test,LunTest
```

or

```
delete lun_from_lun_group CL1-H,Test,00,02
modify lun_group_nickname CL1-H,Test,LunTest
```


Example 12

Adding and deleting WWNs to or from a WWN group and modifying the WWN group nickname (for the same port and WWN group):

```
add wwn_to_wwn_group CL1-D,wwngrp1,0sanjay,testwwn
modify wwn_group_nickname CL1-D,wwngrp1,wwngrp
```

or

```
delete wwn_from_wwn_group CL1-D,wwngrp1,0sanjay,testwwn
modify wwn_group_nickname CL1-D,wwngrp1,wwngrp
```

Example 13

Modifying the WWN nickname and then deleting the same WWN from the WWN group:

```
modify wwn_nickname CL1-D,0sanjay,sanjayAG
delete wwn_from_wwn_group CL1-D,wwngrp1,0sanjay
```

Example 14

Modifying the WWN and modifying the nickname of the same WWN:

```
modify wwn CL1-D,123456789ABCDEF0,FFDCBA9876543210
modify wwn_nickname CL1-D,sanjayAG,0sanjay
```


6 Error messages

This chapter contains CLI error messages and codes you may encounter if a problem occurs during validation.

There are two types of validations performed on CLI commands:

- Command syntax validation
- Configuration validation

Both validation types return error messages or codes if a problem is found with a command.

Command syntax validation verifies the syntax of the command, such as the record format, field type, and ranges for CUs, LDEVs, and so forth.

Configuration validation compares the data submitted to the disk array's configuration. The process checks for configuration errors, such as a duplicate record existing in the disk array, or invalid configuration parameters, such as invalid CU numbers, LDEV numbers, or WWN numbers.

This chapter contains the following tables:

- [Error messages](#), page 195
- [XP48/XP512 error codes](#), page 201
- [XP128/XP1024/XP12000 error codes](#), page 211

Error messages

Table 3 Error messages

Error message	Problem/resolution
AT_LEAST_ONE_OF_THE_ARRAY_SERIAL_NO S_IS_NOT_ADDED_TO_ THE_CV_SERVER	The serial number entered with the "modify attributes <user name> -grant <array Sl.No>..." or "modify attributes <user name> -revoke <array Sl.No>..." argument is not valid or not managed by the Command View management station. Check the serial number and make sure the array is one managed by Command View.
CANNOT_ADD_USER. THE_USER_NAME_IS_RESERVED	The user name entered with the "create user" command is the same as one of the hidden IDs (such as cvapiadmin, guest, read1guest). Enter a different user name.
CANNOT_ADD_USER. USER_NAME_ALREADY_EXISTS. PLEASE_USE_A_DIFFERENT_USER_ NAME	The user name entered with the "create user" command is the same as one of the default user IDs (Administrator, StorageAdmin, User).
CANNOT_ADD_USER. USER_ALREADY_EXISTS. PLEASE_USE_A_DIFFERENT_USER_ NAME	The user name entered with the "create user" command already exists. Enter a different user name.
CANNOT_DELETE_A_USER_ALREADY_ LOGGED_INTO_THE_CV_ MANAGEMENT_STATION	The user who is being deleted is currently logged into the Command View management station. Make sure the user is logged out before deletion.
CANNOT_DELETE_USER. DEFAULT_USERS_MAY_NOT_BE_DELETED	The user name entered with the "delete user" command is the same as one of the default user IDs (Administrator, StorageAdmin, User).
CMD_DEVICE_FORMAT	Invalid format. The format should be: CU, Ldev, LuCmd Device.
CONNECTED_TO_SOME_OTHER_ARRAY	Please disconnect the current array to connect to another array.

Table 3 Error messages (continued)

Error message	Problem/resolution
COUNT_FOR_VOLUME_INITIALIZE	Invalid format. The format should be: list count_For_Volume_Initialize [-pg <Parity Group>].
DEL_LUN_GRP_FORMAT	Invalid format. The format should be: PortName, LUNGrpNickname.
DEL_WWN_GRP_FORMAT	Invalid format. The format should be: PortName, WWNGrpNickname.
DELETE_CREATE_USER_<USER_NAME>	Comma-separated parameters were entered. Check to make only alphanumeric characters are used, and that no spaces are entered.
DUPLICATE_ENTRY	The entry already exists.
ERROR_MESSAGE	Insufficient number of arguments.
EXECUTE_FORMAT	Invalid format. The format should be: execute <filename>.
FAILURE	The operation has failed.
FIBRE_FORMAT	Invalid format. The format should be: PortName, FibreAddr/FibreTopology.
HELP_INVALID_FORMAT	Invalid format. The format should be either help OR help <operation> OR help <operation> <module>.
HOSTMODE_FORMAT	Invalid format. The format should be: PortName, HostModeNumber.
HOSTMODE_NUMBER	Invalid value. The host mode number is out of range.
INVALID_COMMAND_NOT_OPENV	This command is supported only for the OPEN-V emulation type.
INVALID_COMMAND_OPENV	Please use the make volumes command for the OPEN-V emulation type.
INSTALL_CV_FORMAT	Invalid format. The format should be: install CV pgNumber, cu1, ldev1, emulationType1, ldevSize1[;cu2,ldev2,emulationType2,ldevSize2]...
INVALID_CMD	The command is invalid.
INVALID_CMD_VALUE	Invalid value. The command device value should be either SET or RELEASE.
INVALID_CU_RANGE	The CU value is out of range.
INVALID_CU_TYPE	Invalid value. Should be a hex string.
INVALID_CU_VALUE	Invalid value. The value is out of range.
INVALID_DATA	Data is invalid.
INVALID_FIBRE_TYPE	Invalid Fibre Addr/Topology.
INVALID_FORMAT	Invalid record format. The record format should be operation type and a space followed by fields.
INVALID_GROUP_NAME	An invalid group name was entered. Check the name of the group and try again.
INVALID_HOSTMODE_TYPE	The program expected an integer value, but found a hex string.
INVALID_LDEV_RANGE	The LDEV value is out of range.
INVALID_LDEV_SEQUENCE	Invalid LDEV value. The LDEV values must be in ascending order.

Table 3 Error messages (continued)

Error message	Problem/resolution
INVALID_LDEV_TYPE	Invalid LDEV value. The value should be a hex string.
INVALID_LDEV_VALUE	Invalid LDEV value. The LDEV value is out of range.
INVALID_LDEVS_TYPE	Invalid type. The format of device LDEVs in LUSE must be in hex.
INVALID_LENGTH	Invalid WWN/WWNGrpName length.
INVALID_LIST_FORMAT	The list record format is invalid. Use the help command for the actual format.
INVALID_LOAD_ENV	Problem encountered in loading the CLI operating environment.
INVALID_LUN_RANGE	The LUN ID is out of range.
INVALID_LUNID_TYPE	Invalid LUN ID value. Should be a hex string.
INVALID_LUNID_VALUE	Invalid LUN ID value.
INVALID_NICKNAME	Invalid LunGroup/WWNGroup Nickname.
INVALID_NICKNAME_LENGTH	Invalid Nickname. The LUNGrp/WWNGrp Nickname length should be 8 bytes.
INVALID_OPERATION	The specified operation is invalid.
INVALID_PGNAME	The specified PG name is invalid.
INVALID_PORTNAME	The port name is invalid.
INVALID_RECORD	The commands Execute/List/Help can't be part of a batch file.
INVALID_SCSID_RANGE	The SCSI ID is out of range.
INVALID_SCSID_TYPE	Invalid SCSI ID value. The value should be a hex string.
INVALID_SERIAL_NUMBER	Invalid serial number.
INVALID_SERIAL_NUMBER_TYPE	Invalid serial number. The serial number should be numeric and less than 65539.
INVALID_SWITCH_TYPE	The switch value must be ON or OFF.
INVALID_SWITCH_VALUE	Invalid value.
INVALID_TOP_CU_TYPE	Invalid CU type. The top CU should be a hex value.
INVALID_TOP_CU_VALUE	Invalid CU value. The top CU value is out of range.
INVALID_TOP_LDEV_TYPE	Invalid type. The LDEV should be a hex value.
INVALID_TOP_LDEV_VALUE	Invalid value. The top LDEV value is out of range.
INVALID_USER_NAME	The user name entered with the "delete user" command is the same as one of the hidden IDs (such as cvapiadmin, guest, read1guest). Enter a different user name.
INVALID_USER_NAME	In "modify attributes <user name> -grant <array SI.No>" or "modify attributes <user name> -revoke <array SI.No>", an invalid user name was entered. Ensure the correct user name is entered.
INVALID_USER_NAME_OR_PASSWORD. TERMINATING	Invalid user name or password. Ensure that the correct user name and password are entered.
INVALID_VALUE	Invalid value. The value should be a hex string.

Table 3 Error messages (continued)

Error message	Problem/resolution
INVALID_WWN_BYTE_SIZE	The value should be a 16 character string.
INVALID_WWN_GRP_NICKNAME_SIZE	Invalid WWN Group Nickname size. The size should be a maximum of 8 bytes.
INVALID_WWN_ID_RANGE	The WWN ID is out of range.
INVALID_WWN_NickName_SIZE	Invalid WWN Nickname size. The size should be a maximum: 8 bytes.
INVALID_WWN_TYPE	Invalid WWN type. Should be a hex string.
LIST_COUNT_FOR_VOLUME_INIT_FORMAT	Invalid list.
LIST_FORMAT	Invalid format. The format should be: list <OperationType>.
LIST_FREE_LDEVs_PER_CU_FORMAT	Invalid format. The format should be: list free_ldevs_Per_CU [-cu <CU>].
LIST_LDEV_FORMAT	Invalid format. Use the help command to see the actual format.
LIST_LDEV_SIZE_INFO_FORMAT	Invalid format. The format should be: list ldev_Size_Info [-pg <ParityGroup>] [-cu <CU>].
LIST_LUN_FORMAT	Invalid format. The format should be: list lun -port <portname>.
LIST_LUN_SEC_FORMAT	Invalid format. Use the help command to see the actual format.
LIST_LUNGRP_FORMAT	Invalid format. Use the help command to see the actual format.
LIST_LUNGRP_SEC_FORMAT	Invalid format. Use the help command to see the actual format.
LIST_LUSE_FORMAT	Invalid format. Use the help command to see the actual format.
LIST_PG_FREESPACE_INFO_FORMAT	Invalid format. The format should be: list pg_freespace_info [-pg <ParityGroup>].
LIST_PG_VOLUME_INFO_FORMAT	Invalid format. The format should be: list pg_Volume_Info [-pg <ParityGroup>].
LIST_WWN_FORMAT	Invalid format. Use the help command to see the actual format.
LIST_WWNGRP_FORMAT	Invalid format. Use the help command to see the actual format.
LUN_GRP_FORMAT	Invalid format. The format should be: PortName, LunGrpNickname, Luns in hex (minimum 2).
LUN_GRP_NICKNAME_FORMAT	Invalid format. The format should be: PortName, oldLunGrpNickname, NewLunGrpNickname.
LUN_GRP_SEC_FORMAT	Invalid format. The format should be: PortName, LUNGrpNickname, WWNs or WWNGroupNames.
LUN_SEC_FORMAT	Invalid format. The format should be: PortName, LUN IDs, WWNs or WWNGroupNames.
LUN_SWITCH_FORMAT	Invalid format. The format should be: PortName, ON/OFF.
LUSE_FORMAT	Invalid format. The format should be: Expand Lun TopCU, TopLdev, -limit ldevCount -Lun Portname, SCSID, LUN.

Table 3 Error messages (continued)

Error message	Problem/resolution
MAKE_VOLUME_COUNT	Please use <code>list openv_util</code> to calculate the number of volumes to be passed while performing the <code>make volumes</code> operation.
MAKE_VOLUMES_SET_OPERATION	The make volumes operation was successful.
MAKE_VOLUMES_LDEV_COUNT	The number of LDEV IDs provided is not equal to the OPEN-V count.
MODI_WWN_FORMAT	Invalid format. The WWN format should be: PortName, Nickname, NewWWN.
NODATA	Configuration information was not found in the file.
NOT_AUTHORIZED_TO_PERFORM_CREATE_USER_OPERATION or NOT_AUTHORIZED_TO_PERFORM_DELETE_USER_OPERATION	Try these options: Enter a different user name. Check to make sure no parameters are missing. Make sure user name has less than 16 characters and password has less than 32 characters. Make sure password does not have special characters or spaces.
PASSWORD_MAY_NOT_BE_MORE_THAN_32_CHARACTERS_IN_LENGTH	The password entered with the create user command was more than 32 characters. Type "create user" with a username less than 32 characters
PASSWORD_MAY_NOT_HAVE_THese_CHARACTERS: @#&=+\,;:*?<> /" AND_SPACE_CHARACTER	Space(s) or one of the non-alphanumeric characters shown was entered. Type "create user" with a password containing only alphanumeric characters and no spaces.
PATH_EXIST	The path already exists.
PATH_FORMAT	Invalid format. The data record format should be: PortName, SCSID, LUN, CU, Ldev.
SUCCESS	The operation was completed without errors.
USAGE_CREATE_USER<USER_NAME>,<PASSWORD>,<CONFIRMPASSWORD>,<GROUPNAME> or USAGE_DELETE_USER<USER_NAME>	Try these options: Enter a different user name. Check to make sure no parameters are missing. Make sure user name has less than 16 characters and password has less than 32 characters. Make sure password contains only alphanumeric characters and no spaces.
USER_NAME_MAY_NOT_HAVE_THese_CHARACTERS: @#&=+\,;:*?<> /" AND_SPACE_CHARACTER	Space(s) or one of the non-alphanumeric characters shown was entered. Type "create user" with a user name containing only alphanumeric characters.
USER_NAME_MAY_NOT_BE_MORE_THAN_16_CHARACTERS_IN_LENGTH	The user name entered with the create user command was more than 16 characters. Type "create user" with a username less than 16 characters
VALID_DATA	The data record or file data is valid.
VOLUME_INITIALIZE_FORMAT	Invalid format. The format should be: volume initialize pgNumber, cu1, ldev1[;cu2,ldev2]...
VOLUME_TO_SPACE_FORMAT	Invalid format. The format should be: delete vsc_volumes pgNumber, cu, ldev1[;cu2,ldev2]...
WWN_DEL_FORMAT	Invalid format. The format should be: PortName, WwnNickname or WwnName.
WWN_EXIST	The WWN already exists.

Table 3 Error messages (continued)

Error message	Problem/resolution
WWN_FORMAT	Invalid format. The data record format should be: PortName, WWN, WWNNickname.
WWN_GRP_FORMAT	Invalid format. The format should be: PortName, WWNGrpNickname, WWNs in hex (minimum 2).

Error codes

Table 4 XP48/XP512 error codes

Error code	Description
1000	The request of Host Mode (0xN1, 0xN2) is not matched to both of clusters ports value. Both of them must be the same.
1002	CA and/or BC volumes were tried to set the command Device.
1003	Your request was that the path to LDEV would be configured again. The path was set already from that port.
1004	Your request was that the single combination of Port, SCSI ID, and LUN would be configured for more than one volume.
1005	You tried to set the Path to the non-first LDEV at LUSE. You have to set the path to the first LDEV number at LUSE.
1007	Your request of configuration change for the port was rejected, because either you tried to delete the only single path to the CA and/or BC volume OR some host has issued I/Os to the port.
1008	You tried to set volume that did not have any path as Command Device. Or you tried to delete the only single path to the Command Device.
1009	Your request of LUSE is not any correct emulation type of open volume.
1010	Your request was to combine some LDEVs as LUSE, however that had been defined as LUSE before your request.
1011	You tried to set LDEVs of LUSE, but they were over the limitation of CU boundary.
1012	Your request of path definition of LUSE was already defined.
1013	Your request of LDEVs of LUSE had different type of emulation type.
1014	Your request of path definition of expanded volume (by LUSE) was rejected. The LUSE volume might not have any path or might lose any path.
1015	Your request of cancellation of LUSE configuration had still paths.
1016	You tried to combine CVS volume as LUSE.
1017	Your request to the DKC serial number was not existing.
1018	Your request to the port was not existing. Or your request to the port might be miss-matched such as the request to the Mainframe port.
1019	Your request to the SCSI ID was incorrect.
1020	Your request to the LUN was incorrect.
1021	Your request to the volume (CU#:LDEV#) was not existing. Or your request was to the Mainframe volume.
1022	Your request to the Host Mode was incorrect.
1023	Your request to the FC address was incorrect.
1024	Your request to the FC topology was incorrect.
1025	Your request to the path was not existing.
1026	Your request to the LDEVs were not continuous number of LDEVs for the LUSE.
1027	Your request to the Command Device was incorrect.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1028	Your request of the combined number of LDEVs was over the specification of LUSE (Up to 36). Or, when LUSE is released, there is some LDEV that is included in the Expanded LU, and be not set.
1029	The size of CV that are combined to expanded LU, are different each other. Or, you want to combine CV and Normal Volume mixed.
1030	The area that was set for DCR is overlap to another DCR area.
1031	The size of area that was set for DCR is larger than volume size.
1032	The size of area that was set for DCR is larger than Cache size.
1033	The whole volume directions of DCR were specified to be Mainframe system volume.
1034	The classification of the specification method of DCR setting position and volume is not in agreement. (LBA number is specified to Mainframe system volume.) A cylinder number/header number is specified to be Open system volumes.
1035	The setup of required Subsystem ID is not carried out according to CVS operation.
1036	A to which the size of CV is over the range which can be set up (smaller than the minimum value and larger than maximum): The contents of specification are corrected and a demand is published again.
1037	The capacity for creating CV does not remain in Base Volume.
1038	What cannot be intermingled in the emulation type of CV was specified.
1039	It was going to perform CVS operation to the volume to which LU path is set, or the volume by which LU extension is carried out.
1040	CU number of Normal Volume differs from CU number of Base Volume.
1041	Appointed CU number and LDEV number overlap the thing of other volumes by CVS operation.
1042	The volume specified as Normal Volume by CVS operation is not Normal Volume.
1043	The volume specified as Base Volume by CVS operation is not Base Volume. Or the volume specified as CV is not CV.
1044	Two or more CVs exist in Base Volume specified by CV to Normal.
1045	Specified Subsystem ID overlaps the existing Subsystem ID.
1046	The setting number of DCR to 1LDEV is over 16.
1047	The obstacle occurred in CVS increase-and-decrease operation.
1048	There is no specified volume or there was a deletion demand to the volume by which DCR specification is not carried out.
1049	CV by which CVS specification for decrease operation was carried out was the volume of only Base Volume.
1050	The volumes those are connected to expanded LU, include Reserved volume.
1051	In CVS operation, an error is in emulation type specification.
1052	It was going to include WWN already contained in a group in other WWN groups.
1053	It was going to collect WWN to which different access permission is set into WWN group.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1054	When specifying Install CV at the time of Normal to CV operation, CU number and LDEV number of Base Volume were not the same as CU number and LDEV number which were specified by CV.
1055	It was going to set up access permission to LUN contained in LUN group.
1056	It was going to set up access permission to WWN contained in WWN group.
1057	It was going to include LUN already contained in a group in other LUN groups.
1058	It was going to collect LUN to which different access permission is set into LUN group.
1059	It was going to perform LUN Security operation to the port which is not a Fibre port.
1060	It was going to perform LUN Security operation to LUN without LU path.
1061	LUN Security function tended to perform LUN Security operation to the invalid port.
1062	An error is in the size specification which suited the emulation type and the emulation type to specify, at the time of Install CV setup. (User specification capacity is specified to Mainframe system volume.) The number of user specification cylinders is specified to be Open system volume.
1063	It was going to register the same WWN number as what is already registered.
1064	It was going to register the same WWN as what is already registered.
1065	It was going to register the same WWN nickname as what is already registered, or WWN group nickname. (WWN nickname and WWN group nickname must not overlap mutually.)
1066	WWN number not registered was specified (at the time of deletion or change).
1067	It was going to register the same WWN group number as what is already registered.
1068	WWN group number not registered was specified (at the time of deletion or change).
1069	It was going to register the same LUN group number as what is already registered.
1070	LUN group number not registered was specified (at the time of deletion or change).
1071	It was going to set up the functional switch to the port where WWN is not registered. (When setting a functional switch as the port where WWN is not registered, you have to register WWN simultaneously with a setup of a functional switch.) Or the same setting demand as the contents set up now was published to the same port.
1072	It was going to register the same LUN group nickname as what is already registered.
1073	It was going to set up SubSystem ID without CVS operation.
1074	CU specified at the time of CVS operation (Install CV) cannot be set up.
1075	It was intermingled in one composition information setting demand, and CVS operation (Normal to CV, CV to Normal, Install CV, Deinstall CV) was specified to be it.
1076	It was going to create Reserve volume for Auto LUN to the volume which is the pair of HODM/Hitachi TrueCopy - S/390/HP Continuous Access XP/Hitachi ShadowImage - S/390/HP Business Copy XP.
1077	It was going to create Reserve volume for Auto LUN to the volume which is Reserve of Hitachi ShadowImage - S/390/HP Business Copy XP.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1078	It was going to create Reserve volume for Auto LUN to the volume which constitutes extension LU.
1079	It was going to create Reserve volume for Auto LUN to the volume to which DCR is set.
1080	It was going to create Reserve volume for Auto LUN to the volume blockaded.
1081	It was going to create Reserve volume for Auto LUN to the volume to which the command device is set.
1082	It specified as Reserve volume for Auto LUN to the volume not existing.
1083	Reserve volume was set up as Reserve volume for Auto LUN to the volume which is setting ending.
1084	The volume specified as Reserve volume for Auto LUN is over the number (64) of the maximum assignment. Or it was going to cancel the volume more than the number registered with Reserve volume.
1085	The volume specified as Reserve volume for Auto LUN is set up as moved material volume.
1086	The volume specified as Reserve volume for Auto LUN has not supported RAID level. (An object RAID level is 1 or 5.)
1087	The specified move start time is in specification prohibition at the time of automatic move plan creation of Auto LUN.
1088	The specified time cannot be set up at the time of Auto LUN functional parameter setup.
1089	An error is in the form of the specified date at the time of Auto LUN composition change.
1090	An error is in the form of the specified time at the time of Auto LUN composition change.
1091	The specified date cannot be set up at the time of Auto LUN composition change.
1092	The specified time cannot be set up at the time of Auto LUN composition change.
1093	The specified total term is outside the range of a totaled term at the time of a total command setup of Auto LUN.
1094	The deletion demand was carried out to the volume which is not Reserve volume, at the time of Reserve volume release for Auto LUN.
1095	Reserve volume which can be assigned does not exist at the time of HISHM volume move start (under use).
1096	The setup of Reserve volume for Auto LUN was demanded from the volume to which the path group is set.
1097	The composition change demand was carried out to the function in which it does not support.
1098	The setup of the rate of the class maximum use was demanded from the class number not registered.
1099	The setup of a fixed parity group was demanded from FB4 number not registered or the parity group number.
1100	There is less affiliation WWN to WWN group than two.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1101	CVS operation (Deinstall CV) was demanded from non-mounted volume.
1102	LDEV you tried to delete is the only Normal LDEV in the Parity Group. You cannot delete it by VSC Operation.
1103	The specific parity group is not configured in the Array.
1104	The SubSystem ID (SSID) can be set only by performing VSC operation.
1105	For the VSC operation, LDEV IDs assigned exceeds the number which can be set.
1106	The Path setting request was carried out to the Reserve-Volume for Auto LUN. Correct the contents of specification and send a composition information setting demand again.
1107	The Reserve-Volume setting request for Auto LUN was carried out to the volume to which the Path is set. Correct the contents of specification and send a composition information setting demand again.
1108	The setting request of the Command -Device was carried out to the Reserve-Volume for Auto LUN. Correct the contents of specification and send a composition information setting demand again.
1110	Nickname is having an invalid character in the LUN Security Configuration Change request.
1111	Nickname is not specified in the LUN Security configuration change request.
1112	For the Auto LUN related configuration change request, the LDEV is set to migrate to the same RAID group.
1201	CHA High-Speed Mode specification was carried out. There is the Path which cannot set High-Speed mode into the specified Port. The parameter is changed into the path in which a High-Speed Mode setup is possible, and send a composition information setting demand again.
1202	CHA High-Speed Mode specification was carried out. There is the Host mode which cannot set High-Speed mode into the specified Port. The parameter is changed into the Host-Mode in which a High-Speed Mode setup is possible, and send a composition information setting demand again.
1203	CHA High-Speed Mode specification was carried out. There is the Fibre Address which cannot set High-Speed mode into the specified Port. The parameter is changed into the Fibre address in which a High-Speed Mode setup is possible, and send a composition information setting demand again.
1204	CHA High-Speed Mode specification was carried out. There is the Topology which cannot set High-Speed mode into the specified Port. The parameter is changed into the Topology in which a High-Speed Mode setup is possible, and send a composition information setting demand again.
1205	CHA High-Speed Mode specification was carried out. There is the Fibre PCB which cannot set High-Speed mode into the specified Port. The parameter is changed into the Fibre PCB in which a High-Speed Mode setup is possible, and send a composition information setting demand again.
1206	It cannot set by request because there is the CHA which is not set mode. Set the mode of the CHA, and send a composition information setting demand again.
1207	In the volume migration request, there are different points between Source volume and Target volume (ex: Track format, Number of Cylinder, etc.). Set same formatted volumes for Source and Target.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1208	In the volume migration request, the emulation type of the source volume is not supported type. Change request to set another source volume.
1209	In the volume migration request, the emulation type of the target volume is not supported type. Change request to set another target volume.
1210	In the volume migration request, the number of the migration volumes are over the upper limit. Wait to complete other migration request or Cancel other migration request.
1211	In the volume migration request, the combination between the source volume and target volume is not supported combination. Change request to set another source volume or target volume.
1212	In the volume migration request, the source volume that is request is not installed. Change request to set another source volume.
1213	In the volume migration request, the source volume is blocked. Change request to set another source volume.
1214	In the volume migration request, the source volume is formatting now. Wait to complete a format.
1215	In the volume migration request, the source volume that is requested, is Command Device. Change request to set another source volume.
1216	In the volume migration request, the target volume that is defined is not installed. Change request to set another target volume.
1217	In the volume migration request, the target volume is blocked. Change request to set another target volume.
1218	In the volume migration request, the target volume is formatting now. Wait to complete a format.
1219	In the volume migration request, the target volume that is defined is Command Device. Change request to set another source volume.
1220	In the volume migration request, the target volume that is defined is not Reserve Volume of Auto LUN. Define the target volume to be Reserve Volume of Auto LUN.
1221	In the volume migration request, the source volume that is defined has been set to be the target volume of another request already. Change request to define another volume for source volume.
1222	In the volume migration request, the source volume that is defined has been set to be the source volume of another request already. Change request to define another volume for source volume.
1223	In the volume migration request, the target volume that is defined has been set to be the target volume of another request already. Change request to define another volume for target volume.
1224	In the volume migration request, the target volume that is defined has been set to be the source volume of another request already. Change request to define another volume for target volume.
1225	In the volume migration request, the target volume and the source volume are defined to be same volume. Change request to define another volume.
1226	In the volume migration request, the source volume that is defined is "Primary Volume" of Hitachi TrueCopy - S/390/HP Continuous Access XP. Change request to define another volume.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1227	In the volume migration request, the source volume that is defined is "Secondary Volume" of Hitachi TrueCopy - S/390/HP Continuous Access XP. Change request to define another source volume.
1228	In the volume migration request, "RAID Level" of the source volume is not supported. Change request to define another source volume.
1229	In the volume migration request, the source volume that is defined is "Primary Volume" of Hitachi ShadowImage - S/390. Change request to define another volume.
1230	In the volume migration request, the source volume that is defined is "Secondary Volume" of Hitachi ShadowImage - S/390. Change request to define another source volume.
1231	In the volume migration request, the source volume that is defined is "Primary Volume" of HODM. Change request to define another source volume.
1232	In the volume migration request, the source volume that is defined is "Root Volume" of Hitachi ShadowImage - S/390. Change request to define another source volume.
1233	In the volume migration request, the source volume that is defined is "Node Volume" of Hitachi ShadowImage - S/390. Change request to define another source volume.
1234	In the volume migration request, the target volume that is defined is "Primary Volume" of Hitachi TrueCopy - S/390/HP Continuous Access XP. Change request to define another target volume.
1235	In the volume migration request, the target volume that is defined is "Secondary Volume" of Hitachi TrueCopy - S/390/HP Continuous Access XP. Change request to define another target volume.
1236	In the volume migration request, "RAID Level" of the target volume is not supported. Change request to define another target volume.
1237	In the volume migration request, the target volume that is defined is "Primary Volume" of Hitachi ShadowImage - S/390. Change request to define another target volume.
1238	In the volume migration request, the target volume that is defined is "Secondary Volume" of Hitachi ShadowImage - S/390. Change request to define another target volume.
1239	In the volume migration request, the target volume that is defined is "Primary Volume" of HODM. Change request to define another target volume.
1240	In the volume migration request, the source volume that is defined is "Reserve Volume" of Hitachi ShadowImage - S/390. Change request to define another source volume.
1241	In the volume migration request, the source volume that is defined has been set DCR. Change request to define another source volume.
1242	In the volume migration request, the target volume that is defined has been set DCR. Change request to define another target volume.
1243	In the volume migration Cancel request, the volume that is requested cancel, is not defined the migration or completed the migration already. Change request
1244	In the volume migration request, it is impossible to create the "PLAN" that is defined. The reason is the following. The Load is too heavy than defined condition. There is the volume that load is too much. There is not enough Reserve Volume for Auto LUN.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1245	Over the upper limit of Request (Instance) Number for the prediction data of Utilization. Delete the instance that is not used.
1246	In the request of Auto LUN configuration data change, more than one same request is set in one PDU. Same type set request send by each other PDU.
1247	In the request of Auto LUN configuration data change, DKP Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1248	In the request of Auto LUN configuration data change, CHP Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1249	In the request of Auto LUN configuration data change, BUS Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1250	In the request of Auto LUN configuration data change, DRR Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1251	In the request of Auto LUN configuration data change, LDEV Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1252	In the request of Auto LUN configuration data change, ECC Group Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1253	In the request of Auto LUN configuration data change, MPA Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1254	In the request of Auto LUN configuration data change, CARB Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1255	In the request of Auto LUN configuration data change, Cache Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1256	In the request of Auto LUN configuration data change, SM Number that is specified in the request is incorrect. Change Request and re-send Set-Request.
1257	In the request of Auto LUN configuration data change, Combination between MPA and CARB that is specified in the request is incorrect. Change Request and re-send Set-Request.
1258	There is nothing the port that is defined. (Incorrect number, Not Fibre port). Change Request and re-send Set-Request.
1259	When change request to the configuration data of port control, set the upper limited value to the priority port. Change Request and re-send Set-Request.
1260	When change request to the configuration data of port control, set the threshold level to the non priority Port. Change Request and re-send Set-Request.
1261	Path cannot be configured for the LDEV which is reserved for On-Demand.
1262	Command Device setting cannot be configured for the LDEV which is reserved for On-Demand.
1263	The LUSE related configuration change cannot be executed for LDEV which is reserved for On-Demand.
1264	The LDEV cannot be reserved for Auto LUN as it is reserved for On-Demand.
1266	Auto LUN Manual Migration was requested for LDEV which is reserved for On-Demand.
1267	Auto LUN Auto Migration was requested for LDEV which is reserved for On-Demand.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
1268	When change request to the configuration data of port control, both of the threshold level for Total priority Port and priority port are set at same time. Change Request and re-send Set-Request.
1269	The priority mode change failed as Host I/Os are in progress.
1270	WWN is not specified in the configuration change request of PPC.
1273	Specified WWN is not configured in the array.
1280	Parity Group which is not configured as On-Demand has been specified.
1282	You cannot combine On-Demand, LUN Mgmt Operation and Cache LUN operation in a single configuration change request.
1283	Specified Parity Group is reserved for On-Demand operations.
1290	You are trying to install a Temporary key within 180 days after the expiry of the last Temporary Key that was installed or trying to install a Temporary Key when already a Temporary Key is installed.
1291	Capacity of License Key that you are trying to install is insufficient. Please get License Key that is of adequate capacity.
1292	Permanent License Key that you are trying to install is not correct or is of inadequate capacity.
1293	You are trying to install a temporary or emergency License Key when you already have a Permanent Key installed for the software.
1294	The Uninstall Operation of the License Key for software is not done properly. Kindly try to Uninstall it again.
1295	License Key code is incorrect. Please install the correct License Key.
1296	The Licensed Software that is needed before the particular software license that you are trying to install, is not installed.
1297	The License Key is not installed for the particular product. Please get the license key by contacting the HP Product Support.
1298	Both Install and Uninstall commands cannot be executed in same SET operation. Kindly send these commands separately.
1299	Multiple Uninstall requests were sent in a single SET Request.
2000	Your request was rejected because somebody operated to the RC.
2001	SetRequests of configuration or GetRequest were issued at the initial state. At that time R.C. did not have any MIB information to the request. This message may occur at the first operation without Refresh Request.
2002	Your request was failed, because of connection issue between R.C. and SVP. Or you request too early timing, SNMP agent did not start yet.
2003	Request to read information from SVP failed. SVP may be running low on resources. Please have HP representative verify proper SVP RAM configuration and verify that no unsupported applications are running on the SVP.
2004	Mandatory files (Windows DLL/EXE files etc.) could not be loaded for the SNMP operation.
2005	Minimum capacity of memory was not assigned for the operation.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
2006	Your environment did not include all of needed program product. (Ex: LUN configuration Manager XP or R.C. system resources.)
2007	Your request of LUSE configuration was rejected, because LUN configuration Manager XP was not installed. (R.C. program/LUNM/LUSE)
2008	Your request of LUN security was rejected, because Secure Manager XP was not installed. (R.C. Program/LUN Security).
2009	Your request was rejected, because the version of SVP/DKC was incorrect.
2010	Your request of configuration change of port was rejected, because some hosts issued I/Os to the port and the closed port request was rejected.
2011	There might be hardware error. Also, array microcode may have been installed incorrectly. Have your HP service representative re-install the DKC microcode.
2012	There might be the failure of port.
2013	There might be the failure at download.
2014	There might be recoverable error of Port.
2015	Your request was rejected, because of SVP operation.
2016	Your request was rejected, because of SVP operation.
2017	SNMP Agent released the lock state that was issued from somebody. Because he did not reissue lock request as the health check at regular interval.
2018	XP48/XP512: License Key for Cache LUN is not installed. Please install the same to perform any Cache LUN SET operation.
2019	XP48/XP512: License Key for LUN CONFIGURATION MANAGER XP is not installed. Please install the same to perform any VSC SET operation.
2020	DCR for Mainframe required in order to perform the concerned composition information setting demand (P. P. Name: RC Program/DCR or D.C.R) is not installed.
2021	CVS for Mainframe required in order to perform the concerned composition information setting demand (P. P. Name: RC Program/CVS or C.V.S) is not installed.
2022	A in CVS execution: Since SVP and DKC are CVS processing, time is set and a composition information setting demand is published again.
2023	XP48/XP512: License Key for Auto LUN XP is not installed. Please install the same to perform any Auto LUN SET operation.
2024	At the time of Auto LUN composition change, the obstacle occurred.
2025	At the time of Auto LUN composition change, the obstacle occurred.
2026	Use in common at the time of Auto LUN composition change. The obstacle occurred.
2027	The power-supply obstacle occurred at the time of Auto LUN composition change.
2028	It is [PS] under OFF at the time of Auto LUN composition change.
2029	At the time of Auto LUN composition change, the transmission obstacle (CHA) occurred.
2030	At the time of Auto LUN composition change, the transmission obstacle (DKA) occurred.
2031	The version of RMC, DKC, and SVP is not in agreement.

Table 4 XP48/XP512 error codes (continued)

Error code	Description
2032	The connection between DKC -SVP is busy. Wait a just moment, and re-try from Refresh Request.
2033	The Configuration data is changing in SVP. Wait a just moment, and re-try from Refresh Request.
2034	XP48/XP512: License Key for PORT CONTROL RESOURCE MANAGER is not installed. Please install the same to perform any PORT CONTROL RESOURCE MANAGER SET operation.
2035	Possible Auto LUN initialization problem. Go to on-line FAQ under Command View "Support" tab. See item on "Possible Auto LUN initialization problem" for more information.
2036	Required Data cannot be collected for Auto LUN.
2037	Please check the DKC status. If the problem persists on retrying the operation, please contact the HP Product Support.
3000	SNMP Agent could not get the pointer of some external functions.
3001	SNMP Agent could not get the pointer of some external functions for the trace information.
3002	SNMP Agent deleted the failure of logical interface the functions
3003	SNMP Agent detected internal logical error. Possible Auto LUN initialization problem. Go to on-line FAQ under Command View "Support" tab. See item on "Possible Auto LUN initialization problem" for more information.
3004	There was not the management directory of MIB.
3005	SNMP Agent failed to write the management data on the management directory of MIB.
3006	There was some error of mandatory files for the SNMP Agent.
3007	An internal logical error happened in the Agent. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes

Error code	Description
10999	Failed to create internal worker thread. If this problem persists, please call the HP Product Support.
11000	Failed to wait for internal event (Base). If this problem persists, please call the HP Product Support.
11001	Failed to send internal message (Base). If this problem persists, please call the HP Product Support.
11002	Failed to create the window for internal process. If this problem persists, please call the HP Product Support.
11003	Failed to register the window class. Please call the HP Product Support.
11004	An error occurred. If this problem persists, please call the HP Product Support.
11005	An error occurred. If this problem persists, please call the HP Product Support.
11006	An error occurred. If this problem persists, please call the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
11007	An error occurred. If this problem persists, please call the HP Product Support.
11999	Failed to create shared memory. Please call the HP Product Support.
12000	Failed to access shared memory. Please call the HP Product Support.
12001	Failed to reserve memory. Please call the HP Product Support.
12004	An error occurred. If this problem persists, please call the HP Product Support.
12999	An error in the sequence of the operations occurred. Please report this to the HP Product Support.
13000	The number of SET operations you are trying to perform exceeds the MAX limit (8192)
13001	Internal CV Server error. Please file a bug or contact the HP Product Support and report the error.
13999	An error occurred. If this problem persists, please call the HP Product Support.
14000	Failed to access the file. Please call the HP Product Support.
14002	Invalid user ID used for login. Please input the correct user ID and try to log in again. If this problem persists, please call the HP Product Support.
14003	Invalid password. Please input the correct password and try to log in again. If this problem persists, please call the HP Product Support.
14004	Invalid internal logic. Please call the service personnel.
14005	The IP address of the server cannot be obtained. Login is not possible. Please call the HP Product Support.
14006	Remote Registry could not be contacted. An error occurred. If this problem persists, please call the HP Product Support.
14007	Invalid URL. An error occurred. If this problem persists, please call the HP Product Support.
14008	The name is already bound to the registry. Please call the HP Product Support.
14009	Internal Server Error. Please contact HP Product Support.
14010	The Client session has been logged out. CV will retry to log in and establish the connection with the array.
14011	The number of connections allowed to RMI Server is 32. The number of users logged in to the server at present has attained this value. Please wait for sometime and retry.
14012	The RMI server configuration is invalid. Please call the HP Product Support.
14019	Network error detected; exclusive lock is released. CV will be trying to lock the array again.
15074	Invalid key code. Please check the request for setting and re-execute the operation.
15131	You cannot log on because the specified user ID is already being logged on, or because the termination process in the previous logon was not performed properly. Log on with other user's ID. There is a possibility that the termination process in the previous log-on was invalid. (Terminated by pressing the end button of the browser.) After RMI Time-out (default 1 min.), log on again.
15507	Administrator is changing the system environment. (Changing CGI file). Please wait for a while and log in again.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
15508	Forced cancel of Modify is executed. Re-execute Modify.
15513	Result of canceling forced Modify. It cannot be executed when some other manager is holding the lock through SNMP or SVP is in Modify.
15515	Result of canceling forced Modify. The user has not logged on or has not exclusively locked the array.
15516	Result of canceling forced Modify. When the argument 0 is specified, the forced Canceling forced Modify whose configuration is being changed is not executed. Specify the argument 1 (Cancel Modify while the configuration is changed), or wait for the completion of configuration change, and re-execute canceling forced Modify.
15517	Result of forced log off. Since the users other than those execute forced log off do not exist, the forced log off cannot be executed. While other user is logged on, execute the forced log off.
15518	Result of the forced log off. The user specified by the argument has not logged on. After re-executing the user specification that you want to log off with the argument, re-execute the operation.
15519	Result of the forced log off. When specifying 0 in argument, do not execute the forced log off when data is being acquired (When getting) or when the configuration is being changed (When setting). Specify the argument 1 (Execute log off during the data is acquired or during the configuration is changed), or wait for the completion of data acquisition or configuration change, and re-execute forced log off.
15520	Results of environment timer acquisition/setting. The specified timeout name does not exist. Set the correct timeout name of the argument number for acquisition, and set the correct timeout name of the setting class for setting.
15521	Result of setting environment timer. The specified timeout value is out of the scope. Set the correct timeout value of the setting class.
15522	The environment file, env.csv, cannot be opened. CGI is being updated, or update is in process in Set. Please wait for the completion of CGI update or update in Set, and re-execute the operation. env.csv should be opened.
17049	Inconsistent number of the registered data conversion tables. Please call the HP Product Support.
21999	Failed to reserve memory. Please call the HP Product Support.
22000	Failed to create internal worker thread. Please call the HP Product Support.
22001	Failed to create shared memory. Please call the HP Product Support.
22002	Failed to access shared memory. Please call the HP Product Support.
22003	An error occurred. If this problem persists, please call the HP Product Support.
22004	Internal logical inconsistency. Please call the HP Product Support.
22005	Failed to create the window for internal process. Please call the HP Product Support.
22006	Failed to open the environment file. If this problem persists, please call the HP Product Support.
22007	Failed to access the environment file. If this problem persists, please call the HP Product Support.
22008	Failed to access the environment file (Illegal format). If this problem persists, please call the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
22009	Invalid emulation type. The CV server configuration is not valid. Please call the HP Product Support.
22010	Failed to access the environment file (File does not exists). Please call the service personnel.
22011	Requests for configuration change of different products received at the same time. Please contact the HP Product Support.
22013	Internal logical inconsistency. If this problem persists, please call the HP Product Support. Please contact the HP Product Support.
22014	Array cannot be managed presently because some other manager may be trying to manage the array. Wait for a while and reissue the request.
25038	The maximum number which can be processed was exceeded. Please reduce the number of requests and try again.
25128	An error in the sequence of the operations occurred. Please report this to the HP Product Support.
25508	Array cannot be managed presently because some other manager may be trying to manage the array. Wait for a while and reissue the request.
25511	Path and host group cannot be deleted at the same time. Please perform the delete of Path and Host Group separately.
26000	Event creation failed. Please call the service personnel.
26010	An error occurred. If this problem persists, please call the HP Product Support.
26020	Failed to open the environment file. Please call the service personnel.
26021	Failed to access the environment file. Please call the service personnel.
26500	SVP is busy. Please wait for a while and retry.
27028	An internal error occurred. Please try your operation again. If this problem persists, please contact your HP support representative.
27058	Internal logical error. If this problem persists, please call the HP Product Support.
27209	Serial number for the device not registered. Please call the HP Product Support.
28998	Another user has locked the Array. Please try again later.
28999	No right to unlock. An error occurred. If this problem persists, please call the HP Product Support.
29997	Error of the unsupported function. Please check the set data and re-execute the operation. If the problem persists after a few tries, please call the HP Product Support.
30999	Command device is set for the volume used in HP Continuous Access XP or HP Business Copy XP. Please check the setting.
31000	You are trying to set multiple paths to the same volume from one group. Please check the setting.
31001	You are trying to set multiple volumes to one group of port/group ID/LUN. Please check the setting.
31002	Path cannot be set to unmounted volumes, LDEVs other than the top expanded LUSE, reserved volume for Auto LUN and LDEVs set to On-Demand. Please check the setting.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
31004	Failed to remove the path. The specified path is the last path of TrueCopy/ShadowImage volume. Please Correct the contents of LU path setting, and request the setting of the configuration information again.
31006	The emulation type of the LDEV to be combined as a part of LUSE is not an open volume. Please check the setting.
31007	You are trying to set the LUSE including already expanded LU. Please check the setting.
31008	The volume to be combined as a LUSE extends over CUs. In LUSE, all LDEVs should belong to same CU number. Please check the setting.
31009	LU path is set to the volume to be combined as a LUSE. Please check the setting.
31010	The emulation types of the volumes to be combined as an expanded LUSE are not the same. If you want to set the LUSE, you should select LDEVs of same emulation, same capacity, and same volume attribute (either all should be Normal Volume or all should be Custom Volume).
31012	LU path is set to the expanded LUSE to be released. Please release the path of the target volume first, and then disperse the LUSE.
31015	The port specified as the element of the configuration change does not exist. Unmounted port or mainframe port might be specified. Please check the port specified.
31017	Invalid LUN. Please check the setting.
31018	The specified volume does not exist. Unmounted volume or mainframe volume might be specified. Please check the port specified.
31019	Invalid host mode. Please check the setting.
31021	Invalid Fibre topology information. Please check the setting.
31022	The specified LU path does not exist. Please check the setting.
31024	The specified value of the command device setting is invalid. Please check the setting.
31025	The number of volumes that can be combined as an expanded LU is exceeded. (MAX.36). Please check the setting.
31026	The capacities of the volumes to be combined as an expanded LU are not the same. Or, you are trying to mix Customized Volume and the normal volume (Native Volume). If you set the expanded LU, set the same emulation, the volume of the same capacity, and the same volume attribute (Native Volume or Customized Volume: cannot be mixed).
31028	The extent set to Cache LUN exceeds the value which can be set in the target volume. Since the Cache LUN extent which can be set by the volume is variable, check the emulation type of the target volume. For details, call the HP Product Support.
31030	Entire volume instructions of Cache LUN needs to be specified. Please specify START and END LBAs.
31031	The method of specifying the Cache LUN setting position and the volume type do not match. Please specify the cylinder number/header number for mainframe volumes. For open volumes, specify the LBA numbers.
31032	SSID is not set for the VSC operation. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
31033	The size specified during Customize Volume setting is out of the extent. (The value set is smaller than the minimum value, or larger than the maximum value). Note that the size depends on the emulation type of the target volume.
31034	The capacity for CV creation does not exist in the logical parity group. When setting, note that the number of the LDEVs stored in the PG is different depending on the drive type and RAID type. For details, please call the HP Product Support.
31035	The CV emulation type which cannot be mixed is specified. Or, the unsupported emulation type is set. The definition is different depending on the emulation type. For details, contact the HP Product Support.
31036	In the VSC operations, LDEVs with path assigned, part of LUSE and with LDEV Security ON cannot be used.
31037	Internal logical error occurs. Please contact the HP Product Support.
31038	The CU number and LDEV number set in the VSC operation overlap with those of other volumes. Please check the setting.
31039	Cache LUN settings needs to be specified while performing prestaging operation.
31040	Operation is instructed to the logical parity group which is not mounted in the VSC operation. Please check the setting.
31041	During the VSC operation (Volume Initialize), the number of the volumes specified doesn't match the number of normal volumes that needs to be restored. Please check the settings.
31042	The Specified Sub-System ID already exists. Please Contact the HP Product Support.
31045	Request for Cache LUN release is given to the unmounted volume or the volume with no Cache LUN settings. Please check the setting.
31046	During the VSC operation (Volume Initialize), CV is not set in the target logical parity group. Please check the setting.
31047	When changing the LUSE configuration, LDEVs reserved for Auto LUN and On-Demand volumes cannot be used.
31048	Wrong emulation type specified for VSC operation.
31056	LUN security settings cannot be given for ports other than Fibre Ports. Please check the settings.
31058	LUN Security is not enabled for the particular port.
31059	During the CVS operation, the wrong emulation type and the wrong size which matches the emulation type are specified. For mainframe volumes, specify the user-specified number of the cylinder. For the open volumes, specify the user-specified capacity.
31060	The specified WWN number is already registered in the Array. Please specify another WWN.
31062	The Host Group nickname or WWN nickname is already registered. Please check the settings.
31063	The WWN is not registered. Please check the settings.
31064	The Host Group that you are trying to register is already registered.
31065	The unregistered host group is specified. Please correct the specified contents.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
31071	The CU specified during the CVS operation (Install CV) cannot be set. Correct the specified contents.
31072	VSC operations (Initialize, Install CV, Delete LDEV) are specified in a single request for the configuration information setting. This combination of settings is not allowed.
31098	The VSC operation is requested for the unmounted volume. Please check the settings.
31099	The volume(s) you tried to delete is/contains the last volume in the Parity Group. Last Normal Volume cannot be deleted in a Parity Group.
31100	The parity group is not mounted in the VSC operation. Please check the settings.
31101	SSID not being set in the VSC operation. Please report to the HP Product Support.
31102	The number of the LDEV IDs which can be set in the VSC operation is exceeded. (MAX.CU:0-31/LDEV:0-255). Note that the LDEV ID (Upper limit of CU) which can be used is determined with the SM capacity. For details, call the support center.
31105	When changing the command device configuration, you cannot set the following items. 1) Reserve volume for Auto LUN, 2) On-Demand volume, 3) Volume other than OPEN volume (including unmounted volume) Please check the volume where the command device is set.
31108	Nickname is not specified when the change of the LUN Security configuration is requested. Please specify the nickname and perform the configuration change request.
31110	The LDEV tried to be created in the VSC operation is being used as the HPAV function. Change the specified volume ID, or cancel the HPAV settings.
31113	The value is not specified in WWN registration. Or, 0 is set to the value for WWN. Please set the value for WWN and perform the configuration change request again.
31120	The setting of the command device security is requested, but the setting of the command device for the target volume is not performed. When setting the command device security, set the command device in advance or concurrently.
31121	The methods of setting the command device/command device security are wrong. The following cannot be set for the same volume. 1) Setting command device + Releasing command device security, 2) Releasing command device security + Setting command device security. Correct the specified contents.
31122	In WWN registration, the host group where the WWN is registered does not exist. Correct the specified contents.
31123	Command Device cannot be set for an expanded volume.
31124	Though CHA high-speed mode is specified, it is specified to the unmounted CHA. Please check the channel package.
31125	Though the channel speed is requested to change, Fiber PCB is the unsupported version. Please check the channel package.
31126	For WWN related configuration change requests in LUN Security operations, the number of WWNs that can be registered (max. 255) per port is exceeded. Please check the settings.
31127	Invalid character is used when HOST GROUP and WWN are registered. Please change the name and try the configuration change request.
31128	For host group related configuration change request (add/delete/change), the maximum number that can be set for a port is already reached. (range : 0-127)

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
31129	For WWN related configuration change requests (add/change), the maximum number that can be set for a port is already reached (range is 0 - 254). Please check the settings.
31130	Configuration change request contains number of host mode settings which exceeds the maximum number of host group IDs in the port. Please check the setting.
31131	Configuration change request contains number of path settings which exceeds the maximum number which can be set in the port.
31132	When the PORT information (Fibre Address/Fibre Topology/Channel Speed) is set, multiple instructions on change are set to the same PORT. Please check the setting.
31133	When the CHA high-speed mode is set, multiple instructions on change are set to the same PORT. Please check the setting.
31134	Configuration change request contains number greater than the maximum number of LUSE (MAX.4096). Please check the setting.
31137	The Port Group settings needs to be canceled/deleted before performing this operation.
31138	DKC is in the BUSY status. Please wait for a while and resume the operation.
31139	The LDEV has LDEV Security set. Please switch off the LDEV Security before performing the operation.
31140	An internal CV Server error occurred. Please report this to the HP Product Support.
31141	VSC operation involves LDEVs which are part of LUSE. Please disperse the specific LDEVs and perform the operation again.
31198	Though the CHA high-speed mode is specified, the high-speed mode cannot be set to some of the specified paths. (CHA speeds are not the same.) Please check the setting.
31200	Though the CHA high-speed mode is specified, the high-speed mode cannot be set to some of the specified ports. (Fibre Addresses are not the same). Please check the setting.
31201	Though the CHA high-speed mode is specified, the high-speed mode cannot be set to some of the topologies in the specified port. (FC-AL specifications are not the same). Please check the setting.
31347	Since the port to which the path is tried to be set is the port for CA, it cannot be used. Change the attribute of the target port to TarGet or RCU TarGet in order to enable the path setting.
31348	Some ports to which the CHA high-speed mode is set have the different attributes. When setting the CHA high-speed mode, set the same port attributes.
31349	Since the port for which you had performed the configuration change request has the logical paths for CA, it cannot be changed. Delete the logical paths, and re-issue the request for configuration change.
31350	Since the port for which you had performed the configuration change request has the S-VOL logical paths, it cannot be set. You need to delete and set the S-VOL logical paths which is set to the RCU TarGet port. Re-issue the request for configuration change.
31351	Since the port for which you had performed the configuration change request is the Initiator Port of CA, it cannot be changed. Please change the port attribute. (Change to TarGet or RCU TarGet attribute.)

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
31352	Since the port for which you had performed the configuration change request is the Initiator Port of CA, it cannot be changed. Please change the port attribute. (Change to TarGet or RCU TarGet attribute.)
31353	Since the port for which you had performed the configuration change request is the Initiator Port of CA, it cannot be changed. Please change the port attribute. (Change to TarGet or RCU TarGet attribute.)
31354	The port tried to be set is the port for Fibre TrueCopy; it cannot be set. Please delete the logical path and perform the configuration change operation again.
31597	Key for LUN Management Product is not installed or has expired. To perform any operation related with LUN Management, you need to install a valid key. Please contact HP Product Support.
31598	Key for Open Volume Management is not installed or has expired. To perform any operation related with Open Volume Management, you need to install a valid key. Please contact HP Product Support.
31599	Key for Volume Management Product is not installed or has expired. To perform any operation related with Volume Management, you need to install a valid key. Please contact HP Product Support.
31600	License for Open Cache Management is not installed or has expired. To perform any operation related with Cache Management, you need to install a valid key. Please contact HP Product Support.
31601	License for using the Cache Management function is not installed or has expired. To perform any operation related with Cache Management, you need to install a valid key. Please contact HP Product Support.
31999	Connection for communication between DKCs (SVPs) is failed. Please check the setting of LAN. After the check, if the problem persists, please contact the HP Product Support.
32000	Failed to obtain the configuration information. Confirm that the status from SVP to DKC is normal. After the confirmation, if the problem persists, please contact the HP Product Support.
32001	The file required by the application cannot be loaded. Memory could be insufficient. Reboot the SVP and re-execute. If the problem persists, please contact the HP Product Support.
32002	Memory required by the application cannot be reserved.
32003	The specified Port doesn't exist or is a Main Frame specific.
32006	The versions of the SVP and the microprogram of DKC do not match. Please check the versions of the SVP and the microprogram of the DKC.
32007	The I/O from the host to the target path/volume may be sent. Please check if I/O from the host to the target path/volume occurs.
32008	Please check the status of DKC (if it is blockaded). After the check, if the problem persists, call the service personnel.
32009	Port blockade error occurs. Please contact the HP Product Support.
32010	Download error occurs. Please contact the HP Product Support.
32011	Port recovery error occurs. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
32012	Communication failure while connecting to Array. Please check the setting of the LAN. After the check, if the problem persists, please contact HP Product Support.
32013	The Array is locked by another manager through SVP or SNMP.
32014	Communication failure while connecting to Array. The exclusive lock on the array is lost.
32019	VSC related configuration change is being processed in DKC. Please wait for a while and re-issue the request for configuration change.
32030	Internal Processing is being done on Array. The Server is not ready yet. Please try the operation after some time.
32077	Cache LUN prestaging operation failed. I/O may have taken place. Please wait for a while and re-execute the operation.
32078	A failure occurs during the VSC installation/delete LDEV process. Please contact the HP Product Support.
32079	The operation cannot be performed as a host is mounted or a cluster configuration is set.
32080	An error occurs during the process of configuration change in DKC. Please check the status of DKC, and then check the status of the current configuration set. If necessary, re-execute the setting operation. If the problem persists, please call the HP Product Support.
32081	The results of the configuration change is unclear. Please check the status of DKC, and then check the status of the current configuration set. If necessary, re-execute the setting operation. If the problem persists, please call the HP Product Support.
32082	VSC operation cannot be performed. (During COPY for Remote Copy/ShadowImage). Please wait for a while and re-execute the operation.
32083	VSC operation cannot be performed. (Remote Copy/ShadowImage configuration is defined). Please cancel the configuration settings of Remote Copy/ShadowImage, and then re-execute the operation.
32084	VSC operation cannot be performed. (Varied Online from the M/F host). Please bring the M/F host to Offline mode.
32085	VSC operation cannot be performed. (Hitachi TrueCopy - S/390 is being suspended). Please add the alternate path.
32086	VSC operation cannot be performed. (The target CHA may contain the last path of Remote Copy between MCU and RCU.) Please confirm that the alternate path exists from MCU.
32087	VSC operation cannot be performed. (ShadowImage setting exists). Please cancel the ShadowImage setting, or stop the I/O and then re-execute the operation.
32088	VSC operation cannot be performed. (Backup server of ShadowImage is in operation). Stop the backup server and re-execute the operation.
32089	VSC operation cannot be performed. (ShadowImage pair is included). Please split the ShadowImage pair.
32090	VSC operation cannot be performed. (ShadowImage pair is included). Please resynchronize the ShadowImage pair.
32091	VSC operation cannot be performed. (ShadowImage pair is included). Please change the ShadowImage volume to Simplex.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
32092	VSC operation cannot be performed. (Maintenance is in process). Please wait for a while and re-execute the operation.
32093	VSC operation cannot be performed. (The function is not supported in the main. The target function is not supported). Please contact the HP Product Support.
32094	I/O exists in the target WWN, or unregistered WWN, or the request is given to the WWN specified to the group. Please check the specified WWN, re-execute the operation after checking if it is registered, releasing from the host group, or stopping the I/O from the host.
32097	Maximum number of Paths through which the Port can be accessed already configured. Please delete a path to add a new add for this port.
32098	With CHA high-speed mode set for the port, multiple change requests cannot be performed.
32099	VSC operation - Initialize cannot be performed as LDEV ID is not set for the Parity Group.
32167	I/O in the Extended Copy Manager operation may be in progress. Please stop the I/Os by Extended Copy Manager.
32997	Failed to obtain external function pointer required in the application. Please reboot the SVP and re-execute the same operation. If the problem persists, please inform the HP Product Support.
32998	Failed to obtain external function pointer required in the application. Please reboot the SVP and re-execute the same operation. If the problem persists, please inform the HP Product Support.
32999	The interface between applications do not match. Please reboot the SVP and re-execute the same operation. If the problem persists, please inform the HP Product Support.
33000	Unexpected error occurred. After rebooting the SVP, if the problem persists, please contact HP Product Support.
33001	Failed to manage the configuration information. After rebooting the SVP, if the problem persists, please contact HP Product Support.
33002	Failed to manage the configuration information. After rebooting the SVP, if the problem persists, please contact HP Product Support.
33003	An error occurred while accessing a file required by the application. Please reboot the SVP and re-execute the same operation. If the problem persists, please contact your HP support representative.
33004	Interface logical error in the application is detected. Or, unregistered error occurs. Please contact HP Product Support.
42002	An error occurred on RMI Server. Please contact HP Product Support.
46033	TService (RisMan) stops. Please contact HP Product Support.
48006	Failed to initialize. Please try again. If the problem persists, please contact HP Product Support.
50199	Sequence Error in the internal logic of CV Server. Please raise a bug or report this problem to the HP Product Support.
55094	LUN Security Operation being performed for non-fibre port.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
55195	This functionality is not available. License Key for SNMP API needs to be installed. Please contact the HP Product Support.
55196	This functionality is not available. License Key for HPAV is required. Please contact the HP Product Support.
55197	This functionality is not available. License Key for PERFORMANCE MANAGEMENT BASE MONITOR is required. Please contact the HP Product Support.
55198	This functionality is not available. License Key for HP Auto LUN XP is required. Please contact the HP Product Support.
55199	This functionality is not available. License Key for HP APPLICATION POLICY MANAGER is required. Please contact the HP Product Support.
58396	Inconsistent configuration information. Please retry the operation. If the error persists, please contact the HP Product Support.
60999	Failed to initialize the log file for RMI. (Improper environment). Please contact HP Product Support.
61000	Log file formatting error for RMI (Improper environment). Please contact HP Product Support.
61001	Failed to access the environment file for RMI (Improper environment). Please contact HP Product Support.
61002	Error in formatting the authentication file (Improper environment). Please contact HP Product Support.
61003	Error in formatting the list storing file names (Improper environment). Please contact HP Product Support.
61004	An error occurred in RMI Server. If the error persists after retrying, please contact HP Product Support.
63994	Authentication file or data exchange table file does not exist. Please contact the HP Product Support.
63996	Since no data is registered to the authentication file, you cannot log in. Register the authentication data. Please call the HP Product Support.
63998	The array configuration is invalid. Please contact the HP Product Support.
76005	An error occurred in RMI Server. If the error persists after retrying, please contact HP Product Support.
103995	The user ID is already in use. Please try to log in after some time.
1104971	The license for this product will expire in 45 days.
1104972	The license for this product will expire in 30 days.
1104973	The license for this product will expire.
1104974	The license for WEB CONSOLE is not installed.
1104975	The array is equipped with large capacity drives. Please upgrade the license key capacity for the software.
1104976	The software installation status has changed.
1104978	The maximum permissible capacity of software is insufficient.
1105917	Failure while connecting to array because of network error.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
1105960	Failure while connecting to array because of network error.
1106950	An error occurred. Please contact HP Product Support.
1107990	A trap was generated.
1108090	A trap was generated.
1108091	An error was detected in the system. Please retry the operation. If the error occurs again, please contact the HP Product Support.
1904811	Please enter the nickname.
1904812	Please enter the product name.
1904813	Please enter the serial number.
1904814	Please enter a numeric value for the serial number.
1904815	Please enter the IP address.
1904816	Please enter numeric values for the IP address.
1904817	Please enter the location name.
1904818	Special characters like \" \\ , ; : * ? < > / cannot be used.
1904819	Multi-byte characters cannot be used.
1904820	Administrative privileges needed.
1904821	The nickname is already registered. Please specify another nickname.
1904822	Nickname cannot be greater than 16 alphanumeric character string.
1904823	Product name cannot be greater than 16 alphanumeric character string.
1904824	Location name cannot be greater than 16 alphanumeric character string.
1904825	Invalid Array Serial Number. It should be less than 65536.
1904920	Failed to compress the trace file.
1905010	An error occurred in the RMI Server. Security file for download not available. Please contact the HP Product Support.
1905020	The number of storage devices exceeds the maximum.
1905811	Failed to open the storage list file. If the error persists, please call the HP Product Support.
1905812	The storage file does not exist. Please contact the HP Product Support.
1905824	Error occurred in authentication. Please contact the HP Product Support.
3055696	WindowsAPI error. Please contact the HP Product Support.
3055717	File open error. Please contact the HP Product Support.
3055718	Failed to access the file. Please contact the HP Product Support.
3056896	SVP is busy. Please contact the HP Product Support.
3056900	SEND error. Please contact the HP Product Support.
3056901	TRAP SEND error. Please contact the HP Product Support.
3056902	Reject error. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
3056903	File not found. Please contact the HP Product Support.
3056904	IP address not set. Please contact the HP Product Support.
3056905	IP address specification error. Please contact the HP Product Support.
3104700	The IP address specified is not valid.
3104701	All fields in the IP address are specified as zero. Invalid IP address.
3104730	Maximum number of IP addresses are already listed. The limit is 32. Please delete an IP address in order to enter a new IP address.
3104731	Maximum number of Communities are already listed. The limit is 32. Please delete a Community in order to enter a new Community.
3104740	The specified community name is already in use.
3104741	The specified IP address is already listed with the Array.
4054608	Interface error. Please re-execute the same operation again. If the problem persists, contact the HP Product Support.
4054642	An error occurred at the time of execution of Install/Uninstall operation. If the problem persists, please contact the HP Product Support.
4054665	Invalid product name. Please specify a valid product name.
4054666	Temporary key is already installed.
4054667	The array capacity exceeds that of the license key. Please obtain a new key with adequate capacity.
4054668	A dependency of the product that you are trying to install exists. Please see the user guide or FAQ for details. Please install the specified product first.
4054669	The specified product ID is invalid.
4054670	The specified key code is not valid.
4054671	The specified serial number of the array is not valid.
4054672	A dependency of the product that you are trying to uninstall exists. Please see the user guide or FAQ for details. Please uninstall the specified product first.
4054673	A dependency of the product that you are trying to uninstall exists. Please see the user guide or FAQ for details. Please uninstall the specified product first.
4054674	Different DKC type. This product needs another sub-system type.
4054675	The product license cannot be changed. Please contact the HP Product Support.
4054682	Due to the error in other software, this operation cannot be processed. After resolving the error factor, re-execute the operation.
4055096	The trial time limit of the temporary key you had installed has expired. Please order either an emergency key or a permanent Key.
4055097	Insufficient licensed capacity. Please check the request for setting.
4055098	You are attempting to install an emergency key even though the permanent key is already installed.
4055607	Failed to reserve memory. Please contact HP Product Support.
4055617	File open error. Please contact HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
4055618	Failed to access the file. Please contact the HP Product Support.
4056112	I/O in the Extended Copy Manager operation may be in progress. Please stop the I/Os and perform the operation again.
4056655	An internal server error occurred. Please contact HP Product Support.
4056656	Syntax error of the license key file. Please contact HP Product Support.
4056657	Boot mode error. Please contact HP Product Support.
4056658	Non-initialized error. Please contact HP Product Support.
4056659	Insufficient reserved buffer. Please contact HP Product Support.
4056696	The product is already installed.
4056796	SVP is busy. Please contact HP Product Support.
4056797	The array capacity exceeds that of the license key installed. Please obtain a new license key of appropriate capacity.
4056798	A dependency of the product that you are trying to install exists. Please see the user guide or FAQ for details. Kindly install the specified product first.
4056799	A dependency of the product that you are trying to install exists. Please see the user guide or FAQ for details. Kindly install the specified product first.
4056800	The product name is not valid.
4056801	An error occurred. Please contact HP Product Support.
4056802	An error occurred. Please contact HP Product Support.
4057597	Communication error between DKC-SVP. Please contact HP Product Support.
4057598	Communication error between DKC-SVP. Please contact HP Product Support.
4057797	Function BIT OFF. An internal server error. Please contact HP Product Support.
4057798	Hardware is old. An internal server error. Please contact HP Product Support.
4057799	Insufficient hardware. An internal server error. Please contact HP Product Support.
4057800	The array status is not valid. An internal server error. Please contact HP Product Support.
4057801	The software you tried to uninstall is being used.
4057896	Failed to acquire the configuration information. Please contact HP Product Support.
5055496	Windows API error. Please contact HP Product Support.
5055518	Failed to access the file. Please contact the HP Product Support.
5055519	File closing error. If the problem persists after retrying, please contact the HP Product Support.
5055520	File name acquisition error. If the problem persists after retrying, please contact the HP Product Support.
5055531	Invalid parameter when the lower module is called from the high-level. Please contact the HP Product Support.
5055535	Communication error between DKC-SVP. Please call the service personnel.
5055545	Communication error between DKC-SVP. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
5055997	SVP is busy. Please wait for a while and retry.
5056001	SVP is busy. Please wait for a while and retry.
5056002	SVP is busy. Please wait for a while and retry.
5056599	An internal server error occurred. Please contact the HP Product Support.
5056605	An internal server error occurred. Please contact the HP Product Support.
5056606	An internal server error occurred. Please contact the HP Product Support.
5056696	An internal server error occurred. Please contact the HP Product Support.
5056697	An internal server error occurred. Please contact the HP Product Support.
5057496	Timeout between DKC-SVP. If the problem persists after a few tries, please contact the HP Product Support.
5057595	The request is rejected in DKC. If the problem persists after a few tries, please contact the HP Product Support.
5057805	Invalid configuration information. If the problem persists after a few trials, please contact HP Product Support.
5057896	Inconsistent configuration information. If the problem persists after a few tries, please contact HP Product Support.
10100013	The specified fibre address is wrong. Please correct the content of the change request and re-issue the operation.
10100055	The specified Host Group is already in use. Please correct the content of the change request and re-issue the operation.
10104000	The product of number of Host Groups and number of LUN IDs specified should be same as the number of LDEV IDs. Please correct the content of the change request and re-issue the operation.
10104030	The maximum number of paths are already set. No paths can be further set for the Host Group.
10104031	The maximum number of LUNs that can be set for a Host Group is 256. No further LUNs can be set for the specified Host Group.
10104032	The maximum number of LUNs that can be set for a Port is 512. No further LUNs can be set for the specified Port.
10104033	The specified number of LDEV IDs exceeds the number of free LUNs available. Please reduce the LDEV IDs and retry the operation.
10104040	The specified LUN is already in use.
10104041	The specified LUN is not a Command Device.
10104042	Please specify a LUN which is already assigned.
10104043	No port is specified.
10104044	At least one path needs to be mapped to the Command Device.
10104045	Number of LDEVs specified are not valid for the LUN.
10104046	The specified LUN does not exist in the system.
10104047	No LUN ID specified for the configuration change request.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
10104049	Duplicate Fibre Address is specified. Please change the content of the change request and re-issue the operation.
10104089	The specified LUN is the last path the Command Device. Command Device needs to be released first.
10105499	The specified Host Mode is not valid. Please specify a correct Host Mode.
10106050	An internal server error occurred. Please contact the HP Product Support.
10108140	Please specify a LUN ID which is free.
11099954	The specified WWN is already in use. Please correct the content of the change request and re-issue the operation.
11099955	The specified name is already in use. Please correct the content of the change request and re-issue the operation.
11100000	The name cannot contain special characters. Only alphabets (a-z and A-Y) and digits (0-9) are allowed.
11103890	The WWN should contain hex digits (0-9 and A-F) and should be of 16 character string-length.
11103891	The name cannot contain special characters. Only alphabets (a-z and A-Y) and digits (0-9) are allowed.
11103910	The group name can be maximum of 8 characters.
11103911	The name can be maximum of 8 characters.
11103912	Each area of WWN should be of 8 characters.
11103930	The maximum number of Host Groups for the specified Port are already registered.
11103931	The maximum number of WWNs are already registered. No further WWNs can be added. Please delete some WWNs to add more WWNs.
11103932	The maximum number of WWNs that can be configured is 255. No further WWNs can be added.
11103933	The maximum number of WWN groups is 127. No further WWN groups can be added.
11103934	The maximum number of LUN groups is 128. No further LUN Groups can be added.
11103942	The specified WWN already exists.
11103943	The specified name already exists.
11103944	The security switch of the specified Port is OFF. Please turn the security to ON for performing the operation.
11103947	The WWN Group already is already configured with the same LUN Group.
11103948	The WWN is already configured with the same LUN Group.
11103952	The specified WWN already exist in the Port.
11103953	The specified WWN is already mapped to the LUN.
11103954	The specified WWN Group already contains the LUN.
11103955	The specified name is already registered for the particular Port.
11105950	An internal server error occurred. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
20103020	No LUSE volumes available.
20103021	You cannot delete TOP LDEV in a LUSE. Please select a non-TOP LDEV in the LUSE.
20103022	Specified TOP LDEV cannot be used for forming a LUSE. There are no LDEVs available for expanding LDEVs.
20103023	Specified TOP LDEV cannot be used for forming a LUSE. There are no LDEVs available for expanding LDEVs.
51046897	Communication problem between DKCs and SVP. If the problem persists after a few trials, please contact the HP Product Support.
51046910	Communication problem between DKC and SVP. If the problem persists after a few trials, please contact the HP Product Support.
51046928	Monitoring data is being edited. Please wait for a while.
51047040	Abnormal transmission. Please Re-execute the same operation. If the problem persists after a few trials, please contact the HP Product Support.
51049905	Sequence error. Please re-execute the same operation. If the problem persists after a few trials, please contact the HP Product Support.
51049908	Interface error. Interface error of the high-error function may occur. Please check the entered parameter (Please check the extent/format etc.).
51049994	Invalid function code. Function code when the high-level function is called is invalid. Please check if the function code is correct.
51050895	Failed to create thread. If the problem persists after a few trials, please contact the HP Product Support.
51050907	Failed to reserve memory. If the problem persists after a few trials, please contact the HP Product Support.
51050917	File open error. Please contact the HP Product Support.
51050918	Failed to access the statistics information file or plan file. If the problem persists after a few trials, please contact the HP Product Support.
51052006	Parameter error. Please contact the HP Product Support.
51052323	Invalid product name check. If the problem persists after a few trials, please contact the HP Product Support.
51052897	Communication problem between DKC and SVP. If the problem persists after a few trials, please contact the HP Product Support.
51053811	MP failure occurs. If the problem persists after a few trials, please contact the HP Product Support.
51053813	New maintenance call NG. If the problem persists after a few trials, please contact the HP Product Support.
51053814	The target package does not exist. If the problem persists after a few trials, please contact the HP Product Support.
52045871	The HDEV specified as the reserve volume is being used as a secondary HDEV of BC. Please check the status of the specified volume.
52045872	The HDEV specified as the reserve volume is the reserve volume of BC. Please check the status of the specified volume.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
52045873	The HDEV specified cannot be configured as the Reserve volume because the HDEV is part of LUSE. Please check the specification.
52045874	Cache LUN is set to the HDEV specified as the Reserve volume. Release the Cache LUN setting.
52045875	Reserve volume cannot be used. If the problem persists after a few trials, please contact the HP Product Support.
52045876	Reserve volume is the command device. Release the command device, or select other volume.
52045877	Reserve volume unmounted. If the problem persists after a few trials, please contact the HP Product Support.
52045878	The HDEV specified as the reserve volume is already set. If the problem persists after a few trials, please contact the HP Product Support.
52045879	No reserve volume can be assigned. Set the reserve volume, and re-execute the operation.
52045880	The HDEV specified as the reserve volume is used in the hierarchical control. If the problem persists after a few trials, please contact the HP Product Support.
52045881	The RAID level of the HDEV specified as the reserve volume is not supported. Please check the microprogram version and contact the HP Product Support.
52045889	The HDEV specified as the reserve volume is not the reserve volume of the hierarchical control. If the problem persists after a few trials, please contact the HP Product Support.
52045890	No HDEV in the reserve volumes can be assigned as the secondary HDEV. If the problem persists after a few trials, please contact the HP Product Support.
52045891	Since the path group is set, the request is rejected. If the problem persists after a few trials, please contact the HP Product Support.
52045904	The emulation type of the specified reserve volume is not supported. If the problem persists after a few trials, please contact the HP Product Support.
52045912	The volume specified as the source is the primary volume of the concurrent copy. If the problem persists after a few trials, please contact the HP Product Support.
52045913	The volume specified as the target is the primary volume of the concurrent copy. If the problem persists after a few trials, please contact the HP Product Support.
52045914	The volume specified as the reserve is the primary volume of the concurrent copy. If the problem persists after a few trials, please contact the HP Product Support.
52045915	The specified source volume is the primary volume of XRC. If the problem persists after a few trials, please contact the HP Product Support.
52045916	The specified target volume is the primary volume of XRC. If the problem persists after a few trials, please contact the HP Product Support.
52045917	The volume specified as the reserve is the primary volume of XRC. If the problem persists after a few trials, please contact the HP Product Support.
52046002	Since the volume characteristics are different, the pair cannot be set. If the problem persists after a few trials, please contact the HP Product Support.
52046003	The emulation type of the specified source volume is not supported. If the problem persists after a few trials, please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
52046004	The emulation type of the specified target volume is not supported. If the problem persists after a few trials, please contact the HP Product Support.
52046005	The upper limit value is exceeded (Source, Target, Reserve). Please check the number of the volumes which can be set at a time.
52046006	The multiplicity of the copy job is exceeded. If the problem persists after a few trials, please contact the HP Product Support.
52046007	The source volume is unmounted. If the problem persists after a few trials, please contact the HP Product Support.
52046008	The source volume cannot be used. If the problem persists after a few trials, please contact the HP Product Support.
52046009	The source volume is formatting. If the problem persists after a few trials, please contact the HP Product Support.
52046010	The source volume is the command device. If the problem persists after a few trials, please contact the HP Product Support.
52046011	The target volume is not mounted. If the problem persists after a few trials, please contact the HP Product Support.
52046012	The target volume cannot be used. If the problem persists after a few trials, please contact the HP Product Support.
52046013	The target volume is being formatted. If the problem persists after a few trials, please contact the HP Product Support.
52046014	The target volume is the command device. If the problem persists after a few trials, please contact the HP Product Support.
52046015	The volume specified as the target is not the target volume of the hierarchical control. If the problem persists after a few trials, please contact the HP Product Support.
52046016	The volume specified as the source is the target volume of the hierarchical control. If the problem persists after a few trials, please contact the HP Product Support.
52046017	Pair cannot be set to the specified source volume. If the problem persists after a few trials, please contact the HP Product Support.
52046018	The specified target volume is used as the target volume of the hierarchical control. If the problem persists after a few trials, please contact the HP Product Support.
52046019	The specified target volume is the source volume of the hierarchical control. If the problem persists after a few trials, please contact the HP Product Support.
52046020	The specified source volume and the target volume are the same volume. If the problem persists after a few trials, please contact the HP Product Support.
52046021	The volume specified as the source volume is the primary volume of CA. If the problem persists after a few trials, please contact the HP Product Support.
52046022	The volume specified as the source volume is the secondary volume of CA. If the problem persists after a few trials, please contact the HP Product Support.
52046023	The RAID level of the specified source volume is not supported. If the problem persists after a few trials, please contact the HP Product Support.
52046024	The specified source volume is the primary volume of BC. If the problem persists after a few trials, please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
52046025	The specified source volume is the secondary volume of BC. If the problem persists after a few trials, please contact the HP Product Support.
52046026	The specified source volume is the primary volume of Data Migration. If the problem persists after a few trials, please contact the HP Product Support.
52046027	The specified target volume is the Root volume of the BC. If the problem persists after a few trials, please contact the HP Product Support.
52046028	The specified target volume is the Node volume of BC. If the problem persists after a few trials, please contact the HP Product Support.
52046029	The specified target volume is the primary volume of CA. If the problem persists after a few trials, please contact the HP Product Support.
52046030	The specified target volume is the secondary volume of CA. If the problem persists after a few trials, please contact the HP Product Support.
52046031	The RAID level of the specified target volume is not supported. If the problem persists after a few trials, please contact the HP Product Support.
52046032	The specified target volume is the primary volume of BC. If the problem persists after a few trials, please contact the HP Product Support.
52046033	The specified target volume is set as the S-VOL of BC. If the problem persists after a few trials, please contact the HP Product Support.
52046034	The specified target volume is the primary volume of Data Migration. If the problem persists after a few trials, please contact the HP Product Support.
52046035	The specified source volume is the reserve volume of BC. If the problem persists after a few trials, please contact the HP Product Support.
52046036	Cache LUN is set to the specified source volume. If the problem persists after a few trials, please contact the HP Product Support.
52046037	Cache LUN is set to the specified target volume. If the problem persists after a few trials, please contact the HP Product Support.
52046038	The specified volume is not the source volume. If the problem persists after a few trials, please contact the HP Product Support.
52046041	The number of the valid lists specified is invalid. If the problem persists after a few trials, please contact the HP Product Support.
52046042	The specified volume is already the source volume. If the problem persists after a few trials, please contact the HP Product Support.
52046401	License for using the Auto LUN function is not installed or has expired. Please install the required license.
52046798	Confirm that the maintenance operation is not performed at SVP (SVP in modify mode). Please wait for a while and re-execute.
52046799	An internal error occurred. If the problem persists after a few trials, please contact the HP Product Support.
52046806	Since the status is not Simplex internally, the transfer instruction cannot be accepted. Please wait for a while and re-execute the same operation. If the problem persists after a few trials, please contact the HP Product Support.
52046819	Processor failure detected. Please contact the HP Product Support.
52046820	Cache failure detected. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
52046821	Shared memory failure detected. Please contact the HP Product Support.
52046822	Power failure detected. Please contact the HP Product Support.
52046823	PS OFF is in process. Please contact the HP Product Support.
52046824	Data transfer failure (CHA). Please contact the HP Product Support.
52046825	Data transfer failure (DKA). Please contact the HP Product Support.
52046828	The statistic file is being updated (Being automatically obtained). Please wait for a while.
52047797	Invalid command code. Invalid interface between functions inside the agent is detected. Please contact the HP Product Support.
52047798	Unexpected error occurs. Please reboot the SVP and perform the operation. If the problem persists, please contact the HP Product Support.
52049808	Interface error. Interface error of the high-error function may occur. Please check the entered parameter (Please check the extent/format etc.).
52049894	Invalid function code. Function code when the high-level function is called is invalid. Please check if the function code is correct.
52050299	The specified volume is used by Data Migration. Please check the request for setting and re-execute the operation.
52050300	The specified volume is used by CA. Please check the request for setting and re-execute the operation.
52050301	The volume specified as the source is the primary volume of CA, and it is used as a pair whose status is other than Pair Suspended. Please check the request for setting and re-execute the operation.
52050302	The specified target volume is not the target volume of the hierarchical control. Please check the request for setting and re-execute the operation.
52050305	Auto transfer plan of Auto LUN is started doubly. Please wait for a while and re-execute the operation.
52050795	Failed to create thread in initial booting. Reboot a few times. If the problem persists, please contact the HP Product Support.
52050796	WindowsAPI error. If the problem persists after retrying, please contact the HP Product Support.
52050807	Failed to reserve memory. If the problem persists after retrying, please contact the HP Product Support.
52050817	Failed to open the statistics information file or plan file. If the problem persists after retrying, please contact the HP Product Support.
52050818	Failed to access the statistics information file or plan file. If the problem persists after retrying, please contact the HP Product Support.
52050831	Invalid parameter when the lower module is called from the high-level. Please contact the HP Product Support.
52051296	Failed to acquire monitor data. (No statistics information). Please turn on the monitor switch and accumulate the data.
52051297	DKC Busy Please wait for a while and retry. If the problem persists after retrying, please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
52051305	Lock time-out detected. Please wait for a while and retry.
52051306	Command issuance rejected. Please check the pair status.
52051307	Command issuance treated as NOP. Please check the pair status.
52052195	Auto LUN parameter file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052196	Auto LUN plan file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052197	Auto LUN fixed PG file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052198	Auto LUN class file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052199	Auto LUN PG file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052200	Auto LUN LDEV file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052201	Auto LUN configuration file access error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052202	Auto LUN reserve information acquiring error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052203	Auto LUN usage rate acquiring error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052204	Auto LUN plan file output error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052205	Auto LUN PG file output error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052206	Auto LUN LDEV file output error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052207	Invalid Auto LUN parameter file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052208	Invalid Auto LUN plan file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052209	Invalid Auto LUN fixed PG file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052210	Invalid Auto LUN class file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052211	Invalid Auto LUN PG file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052212	Invalid Auto LUN LDEV file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052213	Invalid Auto LUN configuration file. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
52052214	Invalid Auto LUN reserve information. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052215	Invalid Auto LUN internal information. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052216	Failed to create Auto LUN plan. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052217	Auto LUN memory error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052218	Auto LUN internal error. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052219	Auto LUN plan file access error. (Delete) Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052221	Auto LUN plan does not exist. Execute the same operation a few times. If the problem persists after retrying, please contact the HP Product Support.
52052796	Timeout between DKC-SVP. If the problem persists after few retries, please contact the HP Product Support.
52052895	The request is rejected in DKC. If the problem persists after few retries, please contact the HP Product Support.
52052897	The request cannot be received from SVP to DKC. If the problem persists after few retries, please contact the HP Product Support.
53045759	The specified WWN ID is already registered in the array.
53045953	The target port is unmounted. Correct the specified contents, and re-issue the request for configuration change.
53046697	The timer setting is failed. Communication problem between DKC and SVP. If the problem persists after few retries, please contact the HP Product Support.
53046710	Connection for communication between DKCs (SVPs) is failed. Communication error occurs. If the problem persists after few retries, please contact the HP Product Support.
53046728	Monitoring data is being edited. Please wait for a while.
53047698	Unexpected error occurs. After rebooting the SVP, re-execute the same operation. If the problem persists, please contact the HP Product Support.
53049695	Invalid character entered for WWN. Specify 0 to 9, A to F, -, space.
53049705	Sequence error. (Table inconsistency in main). Re-execute the same operation. If the problem persists after few retries, please contact the HP Product Support.
53049708	Interface error (Invalid date, time, relation between start and end, the number of parts divided equally, number, PORTID, host group, LUN, PG, CU, and LDEV). Re-execute the same operation. If the problem persists after few retries, please contact the HP Product Support.
53049713	Invalid the upper limit value/threshold. Enter the correct value (0-65535).
53049794	Invalid function code. (Inconsistent versions in the server). Please call the service personnel.
53049796	The specified WWN is not configured. Please check the specified content and re-execute the operation.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
53049797	The specified PPC group is not configured. Please check the specified content and re-execute the operation.
53049799	The specified PPC group is already registered in the array. Please check the specified content and re-execute the operation.
53049800	The WWN which is the target of monitoring is not mounted in the specified port. Please check the specified content and re-execute the operation.
53049801	The target WWN is already configured to the specified port as the monitoring target. Please check the specified content and re-execute the operation.
53049802	The PPCWWN nickname is already configured. Please check the specified content and re-execute the operation.
53049803	The PPC group nickname is already configured. Please check the specified content and re-execute the operation.
53049804	The maximum number of WWNs are already configured for the specified port. Please check the specified content and re-execute the operation.
53049805	The upper limit value of the WWN which can be registered as the target of monitoring is exceeded. Please check the specified content and re-execute the operation.
53049806	The upper limit value of the WWN which can be registered to the PPC group is exceeded. Please check the specified content and re-execute the operation.
53049807	The operation mode for the WWN belonging to the group cannot be changed. Please check the specified content and re-execute the operation.
53049808	WWNs which already belong to groups cannot be grouped. Please check the specified content and re-execute the operation.
53049809	WWNs with different operation modes cannot be grouped. Please check the specified content and re-execute the operation.
53050695	Failed to initialize (To create thread). If the problem persists after few retries, please contact the HP Product Support.
53050707	Failed to initialize (To reserve memory). If the problem persists after few retries, please contact the HP Product Support.
53050717	Failed to open the file. If the problem persists after few retries, please contact the HP Product Support.
53050718	Failed to access the file. If the problem persists after few retries, please contact the HP Product Support.
53050731	The specified parameter is invalid (Port ID, Priority operation mode, PPC control mode, threshold, upper limit value, update flag, WWN, PPC group ID, the number of settings, usage flag, type of the PPC control), the nickname or combination of the setting parameters is invalid, or WWN nickname is inconsistent. If the problem persists after few retries, please contact the HP Product Support.
53050745	Exclusive check error. If the problem persists after few retries, please contact the HP Product Support.
53050746	Failed to convert Big-Little. If the problem persists after few retries, please contact the HP Product Support.
53051806	Parameter error between PPC and new communication. Please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
53052123	The PP checked in SVP is determined as not installed in DKC. If the problem persists after few retries, please contact the HP Product Support.
53052697	Communication failure occurs. If the problem persists after few retries, please contact the HP Product Support.
53053613	New maintenance call NG. If the problem persists after few retries, please contact the HP Product Support.
53053614	The target package does not exist. If the problem persists after few retries, please contact the HP Product Support.
53069795	The specified PPC group is not registered. Please check the request for setting and re-execute the operation.
53069821	You tried to add the PPC groups which exceeds the maximum number (512). Please check the request for setting and re-execute the operation.
60070015	Failed to open the file. If the problem persists after few retries, please contact the HP Product Support.
80044998	Unexpected error occurs. After rebooting the SVP, re-execute the same operation. If the problem persists after few retries, please contact the HP Product Support.
80047094	Invalid function code. Function code when the high-level function is called is invalid. Please check if the function code is correct.
80049996	Timeout between DKC-SVP. If the problem persists after few retries, please contact the HP Product Support.
80050095	The request is rejected in DKC. If the problem persists after few retries, please contact the HP Product Support.
91046406	Program Product required in this function is not installed. Install the Program Product required in this function and re-execute the request.
91046907	Failed to reserve memory for requesting. Reboot the SVP PC and re-execute the request. If the problem persists, call the support center. (Acquire DUMP)
91046918	Failed to operate the file for executing the request. Reboot the SVP PC and re-execute the request. If the problem persists, call the support center. (Acquire DUMP)
91048205	Unexpected error code is detected internally. Please call the support center. (Acquire DUMP.)
91048897	Communication error occurs during setting. If the problem persists after a few tries, call the service personnel.
91066905	Failed to reserve memory for requesting. Reboot the SVP PC and re-execute the request. If the problem persists, call the support center. (Acquire DUMP)
95045525	The request for setting is received, but data to be processed does not exist. Please check the request for setting, and re-issue the request for setting.
95045536	The number of requests for settings is limited to 3072. Reduce the number of the requests for settings and re-execute the operation.
95046006	License required for this operation is not installed. Please install the license required for this operation and re-execute the request.
95046507	Failed to reserve memory for requesting. Reboot the SVP PC and re-execute the request. If the problem persists after few retries, please contact the HP Product Support.

Table 5 XP128/XP1024/XP12000 error codes (continued)

Error code	Description
95046518	Failed to operate the file for executing the request. Reboot the SVP PC and re-execute the request. If the problem persists after few retries, please contact the HP Product Support.
95047606	For the requested content, the unexpected parameter is set. Please check the setting. If the problem persists after few retries, please contact the HP Product Support.
95047805	Unexpected error code is detected internally. Please contact the HP Product Support.
95047925	The specified port number cannot be used in this function. Please check the specified content and retry.
95047926	The Initiator Ports under the high-speed PCBs needs to be set to the Port Group.
95047927	The Initiator Ports under the high-speed PCBs are set to the Port Group, but the values of HOST Group#0 and Timeout are not set to 100 (Default value).
95048497	Communication error occurs during setting. If the problem persists after few retries, please contact the HP Product Support.
95066505	Failed to reserve memory for requesting. Reboot the SVP PC and re-execute the request. If the problem persists after few retries, please contact the HP Product Support.

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